



सत्यमेव जयते

Assessment of ART Centres in India National Report



National AIDS Control Organisation
Ministry of Health & Family Welfare
Government of India

September 2015





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स्वास्थ्य एवं परिवार कल्याण मंत्रालय

राष्ट्रीय एड्स नियंत्रण संगठन

Government of India

Ministry of Health & Family Welfare

National AIDS Control Organisation

Foreword



With a population of over 1.2 billion, even a low prevalence rate of any ailment means huge actual numbers, necessitating an intense public health response at a large scale. The National AIDS Control Programme (NACP) in India is a good example of such a response. The national response to HIV epidemic has been swift and remarkable comprehensive since the time it was recognised as an important public health problem by the Government of India. The National AIDS Control Programme from the very beginning, was focused and planned to deal with the various aspects of the epidemic – understanding the gravity of the situation; adoption of newer interventions, evidence based planning, and scale-up.

The free Antiretroviral Therapy (ART initiative, launched on 1st April, 2014 by National AIDS Control Programme was a turning point in HIV care which brought hopes to lives of People Living with HIV/AIDS (PLHIV). The programme adopted a public health approach for provision of ART & provides comprehensive prevention, care and treatment services, with a standardized and simplified combination of ART regimen, a regular secure supply of good quality ARV drugs, and a robust monitoring and evaluation system. The programme has grown to a network of 512 ART centre and 1080 Link ART centre in 2015. More than 8.8 lakhs patients are receiving free ART at these sites, second highest number in the world. Wider access to ART has led to 29% reduction in estimated annual AIDS-related deaths between 2007 and 2011. It is estimated that the scale up of free ART since 2004 has averted over 1.5 lakh HIV/AIDS related deaths. It is further estimated that with the current pace of scale up of ART services will further avert approximately 50,000-60,000 deaths annually in the next five years.

The provision of high quality care has been our focus at all stages of service delivery. NACP aims to provide "Universal access to comprehensive, equitable, stigma-free, quality care, support and treatment services to all PLHIV using an integrated approach". Following a decade of ART service provision across the country, NACO conducted a nation-wide assessment of ART Centre with an overall goal to understand the quality of service delivery, and identify systemic barriers in achieving the highest quality standards of ART service delivery and patient care. The assessment was a massive exercise and involved 357 ART Centre across the country, 50 assessment teams & 1620 man days of work, and perusal of nearly 5000 records and 35000 patient treatment cards using specially designed comprehensive tools. The assessment would enable us to focus on the gaps & take necessary measures to provide high quality ART services in a stigma free environment.

This document is a concise summary of detailed facility level as well as state level reports. I am confident that its dissemination will help all concerned to identify the strengths & weaknesses of the programme; and initiate steps to improve the quality of implementation.

Cont...

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अपनी एचआईवी अवस्था जानें, निकटतम सरकारी अस्पताल में मुफ्त सलाह व जाँच पाएँ

Know Your HIV status, go to the nearest Government Hospital for free Voluntary Counselling and Testing

I commend the efforts made by the members of core team for organizing this assessment, and bringing out this report.

The support provided by Centers for Disease Control and Prevention-Division of Global Health and TB (CDC-DGHT), SHARE India, and WHO India for the timely and quality - based accomplishment of the assessment is duly acknowledged. All the officers of Care Support & Treatment Division at NACO are to be complimented for their excellent work. The National AIDS Control Organization acknowledges the valuable contribution from all assessors & experts involved in this massive exercise and would like to express gratitude for their unremitting support and association.



(N. S. Kang)

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Abbreviations

ABC	:	Abacavir
AIDS	:	Acquired Immuno Deficiency Syndrome
ALT	:	Alanine Transaminase
ANC	:	Ante-natal Care
ART	:	Antiretroviral Therapy
ARV	:	Antiretroviral
BMW	:	Bio-medical waste
CD4 cells	:	Cluster of differentiation 4 (a type of T cells)
CDC	:	Centers for Disease Control and Prevention
CHC	:	Community Health Centres
CLHIV	:	Children living with HIV
CME	:	Continuing Medical Education
CMIS	:	Computerised Management Information System
CoE	:	Centre of Excellence
CST	:	Care, Support and Treatment
DLC	:	Differential Leucocyte Count
DOTS	:	Directly Observed Treatment Short-course
EID	:	Early Infant Diagnosis
FEFO	:	First Expiry First Out
FSW	:	Female sex workers
HIV	:	Human Immuno-deficiency Virus
HOD	:	Head of the Department
HR	:	Human resources
HRG	:	High-risk groups
ICTC	:	Integrated Counselling and Testing Centre
IEC	:	Information Education Communication
IYCF	:	Infant and Young Child Nutrition
KFT	:	Kidney Function Test
LAC	:	Link ART centre
LFT	:	Liver Function Test
LFU	:	Lost to follow-up
LT	:	Laboratory Technician
M&E	:	Monitoring and Evaluation
MLL	:	Master Line List
MO	:	Medical Officer
MSM	:	Men who have sex with men
NACO	:	National AIDS Control Organisation
NACP	:	National AIDS Control Programme

NO	:	Nodal Officer
OI	:	Opportunistic infection
OPD	:	Out-patient Department
PLHA	:	People Living with HIV/AIDS
PLHIV	:	People living with HIV
PNC	:	Post-natal Care
PPP	:	Public Private Partnership
PPTCT	:	Prevention of Parent to Child Transmission
RC	:	Regional Coordinator
RNTCP	:	Revised National Tuberculosis Control Programme
SACEP	:	State AIDS Clinical Expert Panel
SACS	:	State AIDS Control Society
SMO	:	Senior Medical Officer
TB	:	Tuberculosis
TLC	:	Total Leucocyte Count

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Executive Summary

1. Introduction

With about 2.1 million HIV infected people, India is estimated to have the third highest number of people living with HIV (PLHIV) among all the countries in the world. India has an estimated adult (15-49 age group) HIV prevalence of 0.27% in 2011.ⁱ The national response to HIV epidemic has been swift and remarkably comprehensive since the time it was recognised as an important public health problem by the government of India during its early years. While the absolute numbers are high, India has demonstrated an overall reduction of 57% in the annual new HIV infections among adult population, largely due to intense and sustained efforts by the National AIDS Control Organisation (NACO) of the Government of India (GOI). National AIDS Control Programme (NACP) launched in 1992 is now in its fourth phase, which aims to accelerate the process of epidemic reversal and further strengthen the epidemic response in India through consolidating gains, focusing on high risk groups (HRGs), scaling up services, providing comprehensive care support and treatment services to all and accelerating quality assurance.

The free Antiretroviral Therapy (ART) initiative, launched on 1 April, 2004 by National AIDS Control Programme was a turning point in HIV care which brought hopes to lives of PLHIV in the country. The programme adopted a public health approach for provision of ART and provides comprehensive prevention, care and treatment services, with a standardized, simplified combination of ART regimen, a regular secure supply of good quality ARV drugs, and a robust monitoring and evaluation system. Through efficient planning and rapid scale up over the years, the number of ART centres has expanded almost logarithmically and 512 ART centres and 1080 Link ART centres (LACs) are functioning in 2015. These centres provide ART to over 880,000 PLHIV, which is the second highest number anywhere in the world. Wider access to ART has led to 29% reduction in estimated annual AIDS related deaths between 2007 and 2011. It

is estimated that the scale up of free ART since 2004 has averted over 150,000 HIV/AIDS related deaths. It is estimated that the current pace of scale up will further avert approximately 50,000 – 60,000 deaths annually in the next five yearsⁱⁱ.

A three tier model of service delivery for ART has been developed by strengthening the existing health care systems: ART centres as central anchor, Link ART Centres for decentralized ART Service delivery and Centres of Excellence (CoE) for specialized tertiary care.

Following almost a decade of ART service provision across the country, NACO commissioned a country-wide assessment of the ART centres from January 2014 to March 2015. The overall goal of the review was two-fold. One was to review the quality of ART service delivery in the country. The second was a validation of the data recorded and reported by ART centres to assess data quality and integrity. NACO's Operational Guidelines for ART services, July 2012 was used as the gold standard for comparing the services and programme elements. NACO collaborated with the U.S. Centers for Disease Control and Prevention (CDC) and their implementing partner SHARE India, and WHO India for this assessment. A core team was constituted to coordinate the design, management of the assessment, analysis and dissemination of report.

The specific objectives of the review of the ART centres and services were as follows:

- A) For quality of ART services:
1. To assess the functioning of the ART centres.
 2. To assess quality of care provided under the CST component.
 3. To assess the performance of the ART centres and identify low performing units; identify the reasons and suggest measures to strengthen those units.
 4. To identify systemic problems/ issues in order to try and address them.

ⁱ NACO. (2014). *Annual Report 2013-14*. Pg. 11 Retrieved from http://www.naco.gov.in/upload/Publication/AnnualReport/Annual report 2013-14_English.pdf

ⁱⁱ NACO. (2014). *Annual Report 2013-14*. Pg. 11 Retrieved from http://www.naco.gov.in/upload/Publication/Annual Report/Annual report 2013-14_English.pdf

5. To assess the level of involvement of the host institution of the ART centre in order to explore the way forward for improving and or integrating ART services with general health services.
 6. To assess client satisfaction at the ART centres; and
 7. To identify best practices that could be replicated at other ART centres.
- B) For data Validation at ART centres:
8. To assess the records for completeness, consistency and correctness;
 9. To identify the ART centres with high (more than 5%) variance in recording and reporting; and
 10. To recommend steps for strengthening data quality.

2. Methodology

The areas for assessment were divided into four “domains” – **Operational, Technical, Monitoring and Evaluation (M&E) and Logistics**. Each of these domains had two or more sub elements, which were termed as “attributes”. These attributes are presented in the below table. Each domain was accorded different maximum possible scores which were weighted based on the perceived importance of that domain in the optimum functioning of an ART centre. In addition to the score, the centres were also graded from 1-5 (with 5 being the best possible performance) based on the percentage of score attained. These grades calculated were not only for the overall score, but also for each domain. Thus, each centre’s performance was rated as O...T...M...L... where the grades were mentioned against each domain.

Table : Details of Domains and Attributes:

Domains	Attributes	Max weighted scores	Collective Grading of domains (O... T... M... L...) on scale of five
Operational (O)	Infrastructure	7	5 – Excellent (90-100%)
	Human resources	8	
	Sub Total	15	
Technical (T)	Counselling	10	4 – Good (75-89%)
	Referrals and Linkages	4	
	Infection control procedures	3	3 – Average (55-74%)
	Attitude towards patients	2	
	Technical Service Delivery	29	
	Sub Total	48	
M&E (M)	Reporting	10	2 – Poor (30-54%)
	Recording	17	
	Sub Total	27	1 – Very Poor (0-29%)
Logistics (L)	Inventory management	9	
	Financial system	1	
	Sub Total	10	
Total		100	

2.1 Data collection tools

The data collection tools to assess the centre were designed by a core team using the NACO guidelines as the standard for comparison.

The tool had two parts A and B. Part A was, by and large, an objective tool wherein the reviewers observed / interviewed staff to score various elements based on objective criteria. NACO's operational guidelines for ART centres were considered as the 'gold standard' against which the existing infrastructure, human resources and other services actually available at the centre were compared. The tool B was an excel sheet designed primarily for onsite data validation, and to record information about technical service delivery.

A very detailed guidance document prepared on the assessment tool and processes involved, helped the assessors to conduct the review; this also ensured uniformity in the assessment processes and scoring across the 357 centres.

2.2 Sampling

All the ART centres that became functional by March 2012, and therefore had been operational for at least 1 year by April 01, 2013, were selected for this review. Based on these criteria, 367 ART centres were selected. Of these, 357 centres were assessed as 10 centres did not meet the prerequisite which required them to have a completed Master Line List (MLL). In addition to the observation and review of records at the site, structured interviews were conducted with the health care personnel (the Nodal Officer, Senior Medical Officer, Medical Officers, Staff Nurses and two Counselors) at the ART centre.

Five beneficiaries were also interviewed from each centre to understand their perspective about access and the quality of services received. Five PLHIV belonging to various groups were selected from each ART centre: i. PLHIV belonging to a high-risk group (FSW, MSM, IDU), or a vulnerable group (such as truckers/migrants), ii. Lost to follow-up (LFU) cases which had been retrieved, iii. HIV-TB co-infected, iv. Pregnant and lactating women, v. Men and women from the general population

To validate data, patient white cards were sampled using a stratified systematic random sampling process (sample size: 10% of the patients listed in the MLL of an ART centre, up to a maximum of 250 per centre),

which were then compared with the registers and monthly reports to assess the variance in the recorded and reported data.

2.3 Data collection, analysis and reporting

The review was conducted in two phases: i. Desk Review; ii. Onsite assessment of facility

Desk Review: Preceding the onsite review which employed the two tools, a desk based data validation exercise was conducted to assess data quality.

Onsite Assessment : The onsite review was carried out by teams of two or three assessors, based on the load at the assigned ART centre. Both the checklists A and B were used during on-site review. Data was collected through mixed methodology: direct observations, review of records, interviews of providers and beneficiaries. The reviewers dedicated three days to each facility.

The onsite data collection was done by 98 technical experts (Annexure-2) who were selected as they had been associated with the HIV/AIDS programme for at least a year, and had a comprehensive understanding of the ART programme. Following selection, they were also provided special hands on training for this exercise, with focus on the use of the review tools.

Following the onsite review, the assessors shared their findings with the in-charge of the parent institution as well as the Nodal Officer of the ART centre. Plans for improvement were also developed based on these discussions. The assessors also sent a copy of both the filled-in tools to the data collection centre.

The data management team then ensured data entry (for Tool A; Tool B did not require any 'data entry' as the data was already submitted in MS Excel format) and analysis. Analysis was simple with basic frequency tables and charts. Scores and grades across each domain were generated. The detailed status of each element, sub-element and the overall scores and grades were shared in the form of a centre-specific report with each of the ART centres visited as part of this assessment. Data from all the centres in one state was then analysed as a whole to generate State-specific reports

2.4 Confidentiality and ethical considerations

Confidentiality was ensured at every step of data collection, compilation, analysis and storage. All reviewers had to sign a copy of data confidentiality form

and were given specific instructions not to carry any original or photocopies of documents from the ART centre, click any photographs or record any videos. Personal identifiers were excluded in the forms during the collection and reporting of beneficiary level data.

Key features of the Assessment

- This assessment is the largest country-wide assessment ever undertaken where 357 of 367 ART centres established before 31 March 2012 spread across were assessed between January 2014 and March 2015.
- 357 ART centres assessed included 16 Centres of Excellence (CoEs), 35 ART plus and 317 ART centres. Among the assessed centres, 150 were located in Medical Colleges, 152 in District Hospitals, 35 in Sub-district hospitals and 20 in public private partnership (PPP) model / other hospital.
- Total of 1,762 beneficiaries interviewed-879 Male 845 female and 38 Transgender Among them 17% (301) were High risk groups, 12% (211) pregnant and lactating women and 14.5% (256) were co-infected with TB.
- During on-site review- 618 Counsellors, 368 Medical Officers 183 Senior Medical Officers, 270 Staff Nurse and 281 Nodal Officers were interviewed.
- The assessors reviewed a random sample of 34,600 patient treatment cards and 4,998 Registers onsite.
- To validate the drug stocks, 1,814 drug stocks observations were reviewed physically.

Team members and efforts:

- 98 assessors were involved in the assessment and were led by core team of seven members.
- 5 core team meetings included interim preparation of check list and finalisation of Check list Tool A& B with guidelines for the reviewer.
- 1620 man days were spent for on-site assessments across the country.
- 2 core team meetings reviewed state reports
- 3 meetings were conducted for interim overview and finalization of national review.
- 1800 man days (6X 300 average) were dedicated for writing district, state and National reports at SHARE India.

3. Findings

The findings of this assessment have been categorised based on the areas of enquiry, namely the domains and attributes mentioned above.

3.1 Operations domain

This domain assessed two key input elements that are needed to operate health services and are essential for the success of any public health program: **Infrastructure** and **Human Resource**.

3.1.1 Infrastructure

NACO's operational guidelines for ART centres specify the needed infrastructure and equipment at an ART centre, including details such as defining the appropriate spaces for and within the ART centre. Under this attribute elements such as space adequacy, accessibility, patient flow and convenience, display of IEC material and key information for patients, equipment and the maintenance of the ART centre were assessed.

- 200 of the 357 centres had adequate space for most of the cadres, such as a separate room for the Senior Medical Officer or Medical Officer, space for blood sample collection, pharmacy etc. Most of the facilities (80%) were found to be clean and well-maintained. Given that the ART centres have been made operational within existing health infrastructure, the findings of this assessment are indeed commendable and reflect the importance accorded to these services by the facilities. However, the pharmacy did require some attention as in more than 40% of the centres, the space allotted to the pharmacy was either inadequate or there experienced excessive humidity, which has the potential to reduce the shelf life and increase wastage of the ART drugs. A separate space for the Counsellor, with adequate audio and visual privacy, was available in less than half (173) of the centres. HIV/AIDS is a disease fraught with stigma and therefore needs careful handling. Many beneficiaries, especially those belonging to HRGs are keen to discuss their health status and behaviours in a private setting. Thus, a demarcated space for counselling, which ensures audio and visual privacy, is one of the most important infrastructural requirements for the ART programme. ART centres that have not as yet ensured this facility for their patients must resolve this gap as a priority. Patient flow to ensure smooth operations of ART centres and patient convenience was followed as per guidelines in 90%

(321) of centres either completely or partially. High patient load and space constraints were the observed reasons for the lack of adherence to the patient flow.

- Furthermore, information on fast tracking of pregnant women/children/cough symptomatic was displayed as per guidelines in almost 60% (211) centres.
- 81% of the facilities have a patient charter displayed which includes vital information such as the timing of the health facility (ART centre), the services available therein and linkages to other centres and social welfare schemes.
- Most of the centres also had the needed equipment including telephone, computers and equipment for doctors etc. However, the complete complement and functionality of the equipment left a lot to be desired.
- One of the probable reasons for some of these gaps in infrastructure could be the reliance on the parent institution and the 'regular health system' to provide some of these elements. Some states did not have adequate infrastructure across all the ART centres. These states will have to work in close coordination with the health systems in their states to overcome inadequacies. The centres with insufficient infrastructure will require major infrastructural improvements to meet the guidelines, enhance quality of service delivery and create a congenial environment for the PLHIV. Improved mainstreaming of HIV/AIDS services within the health systems, thus, could be one of the solutions to address these gaps.
- Furthermore, the ART centre can ensure an amiable environment for the PLHIV and strengthen delivery of care by introducing the following improvements in its functioning. ART centres are encouraged to display signages, flow charts and fast tracking information with complete details in a prominent location within the centre so as to allow the patients visiting the centre have a transparent access to the information regarding their entitlements from the centre.
- Apart from physical space, all ART centres should also ensure that all the equipment and supplies are in place and are functional to ensure adequate diagnosis and management of beneficiaries.
- Strengthening of basic amenities, such as clean toilets (255 centres) and clean water should be ensured as well.

The 357 facilities attained a combined average score of 5 for the attribute of infrastructure, out of a maximum possible score of 7. Over 60 ART centres had Excellent/ Good score and 169 centres had average scores whereas 128 centres were graded as poor.

3.1.2 Human Resources

Adequate numbers and skilled human resource is necessary to provide services. In addition to the ART team which comprises of faculty from various departments of the facility, the ART centre operational guidelines lists down the required number of staff supported by programme, at each centre based on the case load at the facility for effective delivery of quality ART services.

Over all 80% of the ART staff positions were filled. The recruitment status for most positions such as Counsellors, Pharmacists, Data Managers, Care Coordinators and Laboratory Technicians was close to or more than 90%. While about three-fourths (74%) of the Medical Officers were in position against the requirement, almost half (47%) of the SMO positions were vacant and nearly 18% on the nurse positions were vacant. Centre-wise analysis revealed that the SMO position was completely vacant in 169, MO positions in 85 Centres and staff nurse in 52 Centres. Such centres are obviously unable to offer all the services that the ART centre is mandated to perform. The vacancies for these cadres were spread across all the ART centres in country, reflecting a more systemic issue in availability of staff under these cadres: such as non-availability of people under these specialised cadres, remuneration issues, higher attrition rates due to better opportunities. The NACP will need to dwell on this issue further and design a way forward to tackle this problem. The possible solutions could be deputation of staff from the health system cadres and regularisation of these staff positions. In other states where positions were vacant due to operational or administrative reasons, it is recommended that SACS prioritise recruitment of needed personnel for such facilities.

- Of all the staff in position, almost 80% had received training according to the NACO guidelines. There was not much variation in the training status of various cadres. The proportion of people trained did not vary much between cadres with the highest being 88% for SMOs and 72% for data managers. However, the programme should strive for training all the ART staff members as lack of knowledge, skills and competencies among the staff influences the quality of care. There were long delays in providing induction trainings to the newly recruited staff resulting in quality of service delivery as untrained staff members were interpreting the guidelines incorrectly. In addition, centres/states were not implementing refresher training in a fixed and regular manner to update

staff on recent guidelines. States are therefore urged to plan and complete the training of all ART centre personnel who have been recruited till date. The plan should factor the need for ensuring timely training of newly recruited staff, regular refresher training sessions for the already trained staff.

- Institutional mechanisms have been set up to support the functioning of the centre. The ART centre is mandated to be led by a Nodal Officer who is a faculty member from the department of internal medicine. Nodal Officers from 265 centres are visiting the ART centres at least once in a week their facility, however time spent by Nodal Officers was found to be less than 30 minutes in more than half of the centres. A multi-disciplinary ART team to provide overall technical guidance to the centre is formed in three fourth of the centres, with the full range of specialists available in about half of all centres. Similarly, the Steering Committee with the principal officer of the parent institution and the Nodal Officer of the ART centre is responsible for personnel management, including recruitment and appraisals. The Steering Committee has also been formed in three quarters of the centres.
- Thus there is significant improvement required with regard to the availability of skilled human resources at the ART centres. On an average, the centres scored only 4 out of a maximum of 12 in this area, with only 64 (18%) centres scoring more than 6. Majority (76%) of the centres across the country scored between 3 and 5.
- Overall, the average score for all the 357 centres for the domain on Operations was 9 out of a maximum of 15. These were categorised into five categories. Majority of the centres were in grade “Good” and “Average”. While there was no major difference across states for scores obtained by ART centres under this domain, it was noted that centres which were grades 4 and 5 were more concentrated in southern part of India.
- The performance of ART centres under this domain was more dependent on institutional involvement and health care infrastructure in general. Thus any improvement to be done under this domain will require better institutional ownership of ART centres and optimum integration with general health systems.
- Institutional mechanisms such as involvement of Nodal Officer, involvement of medicine and other departments, the formation of an ART team, its regular meetings lead to an appropriate oversight and mentoring for the centre which is important to ensure its smooth functioning according

to guidelines. These mechanisms also ensure institutional ownership. These mechanisms need to be strengthened in many centres. It is worth mentioning here that NACP-IV aims to accelerate the process of epidemic reversal and further strengthen the epidemic response in India through a cautious and well-defined integration process. Without this mechanism being strengthened, integration with health systems will be difficult and may compromise the quality of services.

- HIV should be included as one of the components of the monthly review meetings conducted by the District Collector in which health programmes such as TB, Reproductive and Child Health are discussed.

3.2 Technical Domain

The Technical domain had five attributes: Counselling, Referral and Linkages, Infection control procedures, Attitude and Technical service delivery.

3.2.1 Counselling

Good counselling is important not only to ensure regular treatment, but also to provide psychological support to the patients. This becomes all the more important in the case of HIV due to stigma and discrimination associated with the disease. ART services have a strong component of counselling which aims to improve the quality care and retention of PLHIV in care. PLHIV face many barriers to treatment as it lasts a life time. Counsellors at the ART centres, provide psychosocial support and counselling to all the PLHIV about ART eligibility, CD4 testing, regular follow up, positive living, positive prevention, nutrition & hygiene, ART adherence and TB co-infection.

The **counselling** attribute assessed the quality and effectiveness of counselling. For this assessment, the ‘quality’ of counselling was assessed by asking technical questions to the Counsellors (618 counsellors of the 940 counsellors were interviewed) and rating their responses. The ‘effectiveness’ of counselling was gauged by questioning the beneficiaries (five per centre) about the information that they had received from the Counsellor.

- About two thirds of the Counsellors had appropriate and complete information regarding “Pre-ART” care and counselling for ART preparedness. A similar proportion of Counsellors were well versed with key points for counselling the patient on ART preparedness, such as duration of treatment, treatment details, side-effects etc. However, less than half were aware of/or focused on other areas

of counselling such as regular use of condoms or counselling of pregnant infected women. Only 37% could mention all the points related to counselling a newly registered PLHIV on for TB prevention, early diagnosis and management.

- The interviews with patients revealed that more than three-fourths of them knew the importance of adherence to treatment which is life long and the drugs' side-effects that they could expect to experience, and almost all (96%) were well informed about the date for next follow-up which is an important part to maintain continuity of care.
- Given the stigma and discrimination that surrounds this disease which often has a significant negative psychological impact on the patients, it was heartening to know that more than 90% of the beneficiaries said that they received psychological support from the counsellors.
- Of the 217 pregnant positive or lactating women about 72.8% were given the needed information about PPTCT during ANC, delivery, PNC, early infant diagnosis, or about breast feeding practices to prevent transmission to the child.

However, some components of counselling at ART centres need strengthening particularly adherence, HIV-TB counselling and use of IEC material. The visual impact of IEC material leads to better retention of information among the patients. The other areas where the patients were not as well aware were those that were a less directly linked to ART care, such linkages with other elements of care or the social welfare schemes for PLHIV. Further, centre wise analysis also revealed some centres were not performing optimally on counselling attribute as compared to others. This could be related to vacant positions in high load centres, lack of training to some of Counsellors and lack of audio-visual privacy.

Overall, the centres performed well in this area, and the average score across centres for counselling services was 7 out of a maximum possible of 10. Nearly 46% of the centres had scored 8 and above. The quality and effectiveness of counselling is also reflected in the knowledge and responses from beneficiaries. Majority of the beneficiaries reported to be satisfied with the counselling services. The beneficiary interviews indicate that counselling has laid a good foundation to facilitate the retention in care and adherence to treatment. It has helped in rapport building with the ART centres. The beneficiary feedback on this attribute was overall very positive.

The component of counselling can be improved further, and the patient experience enhanced by focusing on a few key areas such as ensuring auditory and visual privacy in spaces dedicated for counselling; strengthening trainings such as PPTCT; counselling for TB (prevention and management), social schemes relevant to the HIV/AIDS arena etc; and ensuring the availability of IEC material in local language across centres.

3.2.2 Linkages

ART centres need to be appropriately linked to other centres / facilities for ensuring continuum of care and retention of PLHIV in the services. Attribute on **Linkages** aimed at assessing how well these mechanisms are followed to prevent loss at every stage of referral and understanding the effectiveness of these mechanisms. This assessment focussed on linkages of the ART centres with three key service components: ICTC/ PPTCT, RNTCP and LAC/LAC Plus. The team checked the records for these linkages and a completion of more than 80% of the relevant records by the facility was considered to represent good linkage.

- About 43% of the centres were providing regular feedback to ICTC centre for more than 80% of the patients and nearly 37% centres were providing feedback for 50 to 79% of the patients. Observations revealed that different mechanisms of coordination existed between ART & ICTCs. These include electronic sharing of reports and district level coordination meetings under DAPCU for information exchange and reconciliation. Analysis of program data revealed that as many as 82% of PLHIV are linked to ART centres after detection at ICTC.
- The guidelines require all PLHIV to be screened for symptoms of TB at every visit, those found symptomatic are referred for diagnosis and those found co-infected with TB are initiated on ATT as well as ART. HIV-TB line list and register was maintained and followed-up in 91.3% (326) of the centres, of which 60% centres (214) had a completely updated list. More than 90% of HIV TB co-infected patients, registered in year 2013 at the assessed ART centres, were initiated on ART. Also, more than three fourths of the centres had initiated mostⁱⁱⁱ of their HIV-TB co-infected patients on ART.

ⁱⁱⁱ "Most" here refers to >80% of the co-infected patients registered in 2013 who were initiated/ receiving ART

- Programme aims at Universal Access to ART services (including “Pre-ART” care) to all PLHIV. Establishment of the decentralized mechanism for treatment delivery through the LACs is a step towards convergence with the larger health systems especially at peripheral levels. Linkages with link ART centres also had significant scope for improvement, as only 38% of the ART centres which have LACs attached to them were maintaining separate records for tracking patients who had been linked out.
- The reviewed infection control practices were followed in some measure by at least 80% of the centres. However, there were significant gaps when these practices were compared against the standard to understand the magnitude of adherence. For example, while 78% and 86% had colour coded bags and bins respectively for BMW disposal, only 50% and 57% used them on a regular basis.
- Systemic issues such as non-availability of infection control committees and requisite infrastructure such as running water, lack of training of ART staff on infection control practices constitute some of the barriers in achieving optimal infection control.

The average score attained by the 357 centre under “Linkages” was 3, out of a maximum score of 4. Most of the ART centres were maintaining effective linkages with the various facilities/structures identified under this assessment. Further improvement can be brought about as:

- Though more than 90 % of the HIV TB co-infected PLHIV were receiving ART, there is a need to improve coordination, information sharing and facilitating single window services to reduce loss during cross referrals between both programmes.
- LACs have a key role to play in future of HIV care and management. There is need to strengthen this integrated model of service delivery by improving coordination and providing regular training, supportive supervision and mentoring. SACS and NACO will need to engage with the state health departments for facilitating effective convergence to ensure treatment adherence and retention. There is need for better coordination, supportive supervision and mentoring by the nodal ART centres. Regular coordination meetings with the LACs will allow the SMOs/MOs to be aware of the situation in the LAC, especially the challenges faced by them.

3.2.3 Infection Control

Strict adherence to infection control practices gains importance given the lowered immune status of HIV infected patients. The attribute pertaining to **Infection Control** was designed to observe and report adherence of the ART centre to infection control practices and procedures as required by the ART operational guidelines.

- Only two third (233) of the parent facilities had the mandatory infection control committee in place. Of these only 141 included the Nodal Officer of the ART centre as its member.

The average score for infection control was 2, out of a maximum of 3. There was a state-wise variation in overall infection control practices. More than half of the centres in 11 states were graded as “Excellent” for infection control. Considering the crowded settings of the ART centres and the vulnerability of the PLHIV and health care staff to TB infection, there should be ample focus to implement administrative, environmental and PPE measures of airborne infection control. The health department in the states should ensure the constitution of Infection Control Committees in all facilities, especially in tertiary care facilities such as medical colleges and district hospitals where most of the ART centres are located.

The SACS in the five identified states, where the Nodal officer of the ART centre is not a member of the Hospital Infection Control Committee in any facility, are encouraged to send a clarification note/order to all the parent facilities directing the inclusion of the Nodal Officer as a committee member.

3.2.4 Attitude towards patients

PLHIV face many psychosocial and economic problems due to their HIV sero-positive status. They run the risk of facing stigma and discrimination at the health facilities including ART centres. The assessment reviewed elements of discrimination and availability of free drugs. These were the only two elements with a possibility of negative scoring. Centres received negative scoring if the grievance redressal mechanism was not in place, if instances of stigma and discrimination were reported or if the PLHIV were charged for ART drugs. In order to assess the attitude of the ART staff towards the patients, the reviewers observed the availability of a complaint box, the presence of grievance redressal committee, the mechanism of redressal and types of complaints received. Information was further sought from the beneficiaries to understand their experience

with the services, discrimination, stigma or referrals to purchase ART drugs from external pharmacies.

- A functional grievance redressal mechanism is a platform for the patients to make their voices heard, especially in such circumstances. While about 88% of the centres had a complaint box where the patients could lodge their complaints, it was not always in a visible space.
- Also, the follow-on procedures such as regular opening of the box and noting down of complaints in a register were followed in only half of the centres.
- Only 27% (97 centres) had any complaints logged in the register. There were only nine instances of stigma and discrimination recorded across all the ART centres, and according to the available records, suitable corrective action had been taken in six of these cases.
- None of the in-depth interviews with the PLHIV (which included all categories of patients - FSW, MSM, IDUs, positive pregnant women, HIV/TB co-infected and general men and women), revealed any instances of stigma and discrimination by the ART staff. This included beneficiaries from ART centres where complaint box was not available.
- Ten percent of the beneficiaries shared that they had borne out-of-pocket expenditures for basic investigations. Beneficiaries from 26% (92) of the centres reported that OI drugs had to be bought from external pharmacies at times.

While the maximum possible score was 2, the minimum score for this attribute could go up to minus 3 due to the negative scoring pattern. In some (9%) centres, the scoring came down due to negative scores resulting from non-availability of complaint box, redressal register and OI drugs. Despite this, the average score for this domain was 1 and most of the ART centres (68%) scored between 1- 2 indicating that ART staff have a positive attitude towards the patients. However, given the stigma and discrimination that surrounds PLHIV, a strong grievance redressal mechanism is essential. Therefore, all ART centres should implement a robust and transparent redressal mechanism. States may be required to follow up with the ART centres and also resolve any such cases in the State Grievance Redressal committee meetings. Many states have made routine investigations available free of cost to the PLHIV and other states could emulate this practice. As most of the drugs used for treatment of opportunistic infections are routinely available with the health systems, SACS should coordinate with the broader health systems to

ensure adequate availability of OI drugs as these are not provided by the NACP.

3.2.5 Technical service delivery

The findings in this area are perhaps the most important part of this report, as it throws light on whether or not the patients were actually receiving the services that ART centres are mandated to provide. In order to assess parameters under this attribute, a desk review of the monthly reports and Master Line List was done to understand retention in care at each of the ART centres. The assessors carried out an in-depth review of records & registers and interviewed health care providers and beneficiaries to gather information about technical service delivery aspects.

- Upon registration to an ART centre, all PLHIV have to undergo a baseline CD4 count test which forms the basis of the decision to initiate ART. Almost all the patients (97%) had received this service. In as many as 333 of 357 centres, the baseline CD4 counts were done for more than 90% of the patients.
- However, the follow-up CD4 tests, which are mandated every six months for those in “Pre-ART” care as well as those on ART, were at significantly lower levels – 37% and 60% for “Pre-ART” and ART patients respectively. However, there has been an increase by 67% for “Pre-ART” and 81% for patients undergoing regular CD4 count as per analysis done for the last three years. The gaps in CD4 testing is perhaps due to the limited number of CD4 machines and lesser emphasis on “Pre-ART” patients in the earlier years of the programme.
- Basic investigations to assess the overall health status of the patient and physical preparedness for ART also had gaps. 64% of patients on ART and 40% PLHIV in “Pre-ART” had undergone these laboratory tests. The low rates for basic investigations may be attributed to the absence of the required laboratory facilities for these tests at many facilities, especially the district hospitals.
- Of those found eligible, 83.2% were initiated on ART. In as many as 83.4% of ART-eligible patients, ART preparedness was done and documented by the Counsellor and the median time taken for initiation on treatment was 9.4 days. However, there was a large inter-centre variation with regard to the timely initiation of ART. Only 60% of the centres had initiated more than 80% of their eligible patients on ART. NACO and SACS will need to work with the ART centres to understand the reasons behind this gap and ensure that the core purpose of setting up these centres is met.

- Review of HIV –TB register revealed that 91% of the PLHIV received ART in year 2013. Also, more than three fourths of the centres had initiated more than 80% of their HIV-TB co-infected patients on ART.
- The knowledge of SMOs and MOs on HIV/ AIDS related issues was also tested through some simple questions covering different domains of care. While most of them were found to have the correct information on most of the issues they were questioned about, some areas that require attention include diagnosis of infection by HIV2 variant, the criteria for diagnosing treatment failure, and the management of relatively rare OIs such as cryptococcal meningitis.

Out of a maximum of 29 marks that could be scored for this attribute, the average score across the centres for “Technical service delivery” was 21. Most of the ART centres were performing well and scores varied from “Good” to “Average”. The performance was found to be good on parameters such as baseline CD4 count, follow up CD4 for on-ART PLHIV, ART initiation of eligible PLHIV and management of HIV-TB co-infection. Focus on PLHIV in “Pre-ART” is important to ensure retention in HIV care. The knowledge of staff on various issues signifies the effectiveness of the trainings which is being imparted to them. However, the actual practices may vary as seen from findings of some of the key indicators. This underscores the need for onsite mentoring and regular supervision.

3.3 Monitoring and Evaluation Domain

Monitoring and evaluation is essential for improving programme performance. The availability of complete and accurate data contributes to the development of programme policy and planning and facilitates corrective actions for improvement. It also guides the ART staff to strengthen clinical management of PLHIV and helps attain long term goals of improving patient survival and reducing morbidity. Standardized tools for recording and reporting data are being used at ART Centres across the country.

The assessment team validated and triangulated the various data sources and checked the data for completeness, consistency and correctness. Variation between various data sources was calculated as a percentage, using one source, such as the MLL, as the standard.

The process of data validation was divided into two attributes i) **Reporting** and ii) **Recording**.

3.3.1 Reporting

Reporting refers to generation of reports (as required by NACO) from the source registers. This was done during the desk review as well as onsite visit by the assessors.

Comparison of MLL with ART Centre monthly report to assess consistency in reporting:

- The analysis revealed a minimal variation between the MLL and the monthly report, for the indicator “Total number of PLHIV registered in HIV care” which is a pivotal indicator and forms the basis or the denominator for all the other indicators reported in monthly report.
- Retention in care is reflected by the indicator “Cumulative Number PLHIV in Active Care”. This indicator considers both “Pre-ART” and on-ART PLHIV retained in care. The median variance on the negative side (under-reporting) and on the positive side (over reporting) was -10.6 and 10.3 respectively. The indicator “**Total number of PLHIV on ART**” which is a subset of PLHIV in active care demonstrated a median variance of -8.4 on the negative side (under reporting) and +8.7 on positive side (over reporting). Though there were variations at ART Centre level, over-reporting and under-reporting cancelled each other out at the national level.

Assessment of Master Line List for Completeness, correctness:

- Comparison of the MLL with the “Pre-ART” register to assess completeness of the list revealed an overall absolute variance of - 0.5%.
- Comparison of the MLL for current status of patient to assess **Correctness of Master Line List** showed an overall variance of 21.6% at the all India level (Range 0% - 87.2%). The variance was found to be 5% for the on-ART patients. The variance was mostly due to not updating the MLL.

The overall performance of the centres on this attribute was better. More than three fourth of the centres (271) scored at least 8 marks out of a maximum of 10. The average score across the 357 centres was 8. It is pertinent to mention here that though the concept of Master Line List (MLL) was introduced by the programme just prior to this assessment, the ART Centres have internalized the concept and have been able to implement it.

3.3.2 Recording

Recording primarily looked at the completeness of the registers and reports being maintained at the ART centres. The white cards of 10% of the patients were randomly sampled (using the MLL as the universe for sampling) from each centre, up to a maximum of 250 cards from one centre.

- The review revealed that the initial information about the patients and treatment regimen changes were complete in about 85% of the cards, whereas some fields such as the basic investigations were complete in only 50% of the cards.
- Completeness in 90% of the columns in a register was set as the cut-off for acceptability. 249 (69%) and 277 (78%) centres had 'complete' entries in their "Pre-ART" and ART registers (respectively).
- More than 50% of the centres maintained the list of patients eligible but not initiated on ART and also had the guidelines available and accessible.

Out of a maximum possible score of 17, the average score across the 357 centres for this attribute was 13. This shows that almost half the centres were graded as "Good" or "Excellent" for this attribute. This was one attribute with perhaps the widest variation among different states.

Most assessed centres performed satisfactorily under the M&E domain. Close to two-thirds of the centres were graded as 'good' or 'excellent' under this domain. This was despite the manual system of recording and reporting. A patient tracking system needs to be in place for better patient care and tracking them across facilities and states. Regular and timely updating of the key records and registers is of primary importance to reduce inter-source discrepancy in data. The ART centres should focus specifically on data related to patients on "Pre-ART" care, and on indicators related to patient outcomes.

To strengthen the data quality, NACO can consider instituting a system of validating the data regularly onsite (perhaps similar to the one conducted as part of this assessment, but on a smaller scale) by the centre as well as SACS. Such periodic checks will help ensure better data quality.

The data submitted by the centres through the monthly reports forms the basis of national level programme planning. Thus, the importance of reporting accurate data should be explained to the ART centre. ART staff should be trained on how to interpret and analyse the

data emanating from their centres and utilize it for monitoring the registered PLHIV for enhancing their retention and quality of life.

3.4 Logistics Domain

3.4.1 Inventory Management

Three areas were reviewed under this attribute – availability of drugs, adherence to storage norms, and data validation for drug stocks. Most of the drugs were available in more than two thirds of the centres. They were available at the locations prescribed by programme, for example PEP drugs were available in the labour room, emergency ward and casualty, were available. The key bottleneck was the availability of drugs for Opportunistic infections, and less than half the centres had all the required OI drugs as listed in the guidelines. While most centres (77%) were following the basic drug management systems like First-expiry-first-out (FEFO), only one-third were following the storage norms.

Data validation for drug stocks was done through multiple methods of comparisons between records as well as comparison with actual physical availability of drug stocks. Most of the centres (90%) did not exhibit any variation between the stock register and the monthly report, and only 14 centres reported a variation of more than 10%. However, the variation between the physical availability and the stock register was more than 5% ('high') in 62 centres, and between 0.1% and 5% in another 92 centres. The entries in the drug dispensing register were also compared with the regimens entered on the patient white cards and 287 centres showed an almost absolute (>95%) match.

The overall performance of the ART centres under this attribute was perhaps the best amongst all assessed as part of this review. Three-fourths of the centres were found to be "Excellent" or "Good". Information in most of the data sources for drug stocks more or less matched with each other and was found to be correct and consistent though these records were manually maintained by ART pharmacists/nurse. This reflects that the centres have a robust system of drug stock management. A computerized and online system will further strengthen this system and enable the Program Managers at the state and National level to access real time stock availability data online which in turn empowers them to take the necessary remedial measures. One area of concern was absence of periodic physical stock verification and reconciliation mechanisms in about half of the centres. Assessment revealed gaps in availability of OI drugs. This finding

corroborated with the beneficiaries interviews where non availability of OI drugs was reported. Most of the OI drugs are commonly available in general health systems. SACS should coordinate with the general health systems to ensure the availability of these drugs. SACS could also advocate for these drugs to be incorporated in State List of Essential Drug list (SLEM) to address the issue.

Another major gap was with respect to the storage practices. This will need to be strengthened by training the pharmacists. Further analysis revealed that nearly 30% centres didn't have adequate pharmacy. In the high-load ART Centres where drug volumes are quiet huge, drugs should be stored in main hospital pharmacy.

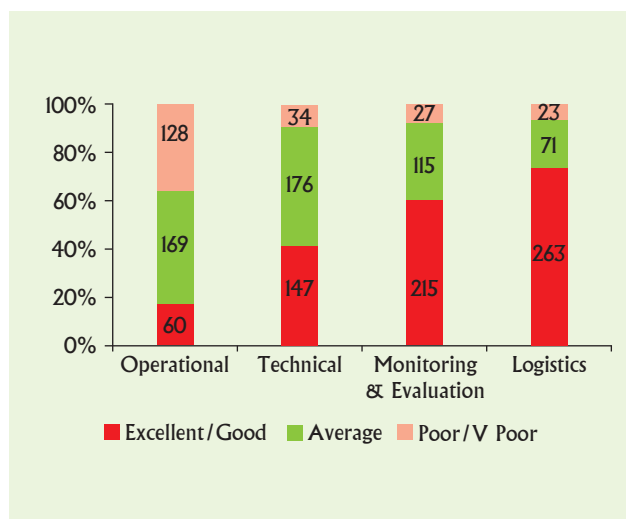
3.4.2 Financial Management

Most of the centres were found to be following the financial management guidelines as specified by NACO. Most (94%) centres had a separate bank account which was not linked to the account of the parent facility.. The operational gaps such as non-availability of valid signatories could be improved further to ensure availability of financial resources to the centre without bottlenecks.

Almost three fourths of the centres were graded as "Good" or "Excellent" and only one centre was graded as "Very poor" having scored less than 3 out of a maximum of 10.

The overall status of the centres across all 4 domains, based on the scoring and grading is shown in the figure below.

Overall Grades obtained by the ART centres across domains



Quality of services- from Beneficiaries Lens

- Five beneficiaries were interviewed from each ART centre.
- 1785 (892 Male, 857 Female and 36 Transgender) beneficiaries were interviewed. In all, 882 beneficiaries were below the age of 35 years and 903 were 35 years and above.
- General beneficiaries constituted 53% (26% Male: 27% Female) of those interviewed under this assessment. Respondents included 14% HIV-TB patients, 12% ANC / PNC, 7% Migrants /Truckers, 4% FSW/MSM/ Retrieved LFU each and least 2% TG.
- Of the 1,785 beneficiaries interviewed, majority of the beneficiaries reported having been counselled about most of the aspects of treatment care and positive healthy living.
- Majority of the PLHIV (more than 95%) were satisfied with the care provided at the ART centres.
- Except for two PLHIV, none reported instances of stigma and discrimination at ART centre.
- There was no major variation in responses of the beneficiaries belonging to different groups.
- None of the beneficiaries reported having to purchase ARV drugs,
- It was heartening to observe that there were only nine instances of stigma and discrimination recorded in the complaint register in the ART Centres assessed, and six of them had been addressed by the institution.
- Interviews did not reveal instances where PLHIV were asked to pay for ARV drugs or were prescribed ARVs from outside the ART Centres.

5. Recommendations

Following the review, the detailed report was shared with each ART centre, and the assessors helped each centre develop an action plan for improvement. These action plans with defined timelines and personnel responsible have been shared with SACS and NACO. In some cases, follow up reports on the action plans have also been received.

In addition to the steps that can be taken at the level of the ART centres, there are steps that will need to be taken by NACO and SACS. These include:

- **Mainstreaming of HIV/AIDS programming in regular health systems:** Some of the gaps seen signify a lack of ownership by the parent facility. Closer coordination between routine health systems and HIV programming at all levels, and strengthening of health systems will hopefully bridge these gaps. Also, HIV should be an integral component of monthly review meetings held at district level.
- **Improved linkages within various elements of HIV programming:** The various programme elements within HIV/AIDS arena form a continuum, and it is important the various parts work in a coordinated manner. Orienting all staff and Programme Managers on these linkages should help.
- **Availability of adequate and skilled human resource:** Recruitment of personnel in adequate numbers and providing them training for this highly specialised area of work, including refresher training, is key to improving the quality of services being provided. Non-availability of staff under certain cadres such as doctors and nurse leads to compromises in quality of care. The possible solutions could be deputation of staff for the ART centre from health system cadres and regularisation of these staff positions.
- **There is a need to reiterate emphasis and develop strategies including SoPs and trainings to strengthen retention in care.** Similar emphasis is required to strengthen mechanisms for outreach.
- **To ensure regular availability of other OI and ARV drugs, SACS should get the drugs incorporated in the State List of Essential Drug list (SLEM),** as has been done by some centres in which have included the OI drugs in their hospital list.
- **Though more than 80 % of the HIV –TB co-infected PLHIV were receiving ART,** there is further scope for improvement in terms of coordination, information sharing and facilitating single window services to reduce loss during cross –referrals between both programmes.

- All ART centres should implement the redressal mechanism as per operational guidelines.
- The findings of this assessment underscore the need for better and more frequent onsite mentoring and regular supervision.
- **Improved monitoring of the programme:** The tools used in this assessment can be adapted and implemented as part of the regular monitoring of services at the ART centres. This can be followed by corrective actions for the gaps identified.
- **A comprehensive computerised online patient management and tracking system is required to ensure quality of care and also integrity of data.**
- **A computerised online system is required to strengthen inventory management.**

6. Steps so far

To enable improvements in the identified gaps, NACO is committed to take this beyond just analysing and documenting the findings but to trigger specific action plans across the country. NACO had initiated certain actions.

Actions taken till now

- Immediately following the assessment of each centre, a centre-specific report on major points was prepared as well as verbal feedback was shared with the ART centre staff for timely action.
- Following the documentation of the centre-specific reports, the state-level reports were prepared. The reports presented overview of centre level findings in the state and provided some centre-specific results as well.
- The CST division of the SACS, along with the Regional Coordinators (RCs), have already begun monitoring of the centre specific action plans. They are also providing technical assistance to the centres to facilitate improvements in service delivery.
- To address the gaps that were common to a larger proportion of the centres (for example patient flow, fast-tracking of pregnant women, children and cough symptomatic, allocation of separate space/cabins for maintaining the audio visual privacy among others), the NACO and SACS have circulated letters and office memorandum emphasising the importance of following the guidelines.
- The need for conducting refresher training for the Nodal Officers / SMOs / MOs was identified as a result of the assessment. In the three months since nearly 400 Medical officers have been trained.
- To address concerns related to technical service delivery, NACO has initiated CME sessions for the

ART staff members with the aim to increase their capacities. NPO (ART) has conducted two Distance Learning Seminars (NDLS) in which almost all the ART centres participated and their queries on different aspects of ART (technical as well as programmatic) were answered.

- For issues related to M&E tools, two more NDLS were conducted - on M&E tools and retention cascade. In addition, MOs and Data Managers from North East (NE) States were trained on M&E tools with support from WHO.
- In order to reduce LFU at various steps in the retention cascade, all CST officials including SACS were given hands on training and hand holding by NACO. 200 ART centres were trained on analysis of Early Warning Indicators (EWI) and Quality of Care Indicators (QCI) to improve the outcomes and delay the emergence of drug resistance.
- To tackle issues of uneven distribution of drugs at the centres across the states, NACO has developed and implemented an Inventory Management System at 450 ART centres with support from CHAI. This has been revised to include data from LACs as well as capture data on CD4 counts.
- Based on the action plans prepared, the centres are now required to share “Action taken” reports on a periodic basis. Till date, 102 of the 357 reviewed centres have shared their follow-up reports. The data mismatch was a concern in many centres and 40 of the 102 centres have reported their efforts to revise their MLL based on source records. About 12 of them have gone a step ahead and made changes in the monthly report to reflect this revised / cleaned data. NACO is in the process of reviewing these reports and providing feedback to the centres.



Chapter 1

Introduction

1.1: HIV/AIDS – Epidemiology and the National Response in India

Globally, India has the third highest number of estimated people living with HIV. According to the HIV estimations in 2012, the number of people living with HIV/AIDS in India was 2.089 million. The estimated adult (15-49 age group) HIV prevalence was 0.27% in 2011.¹ The HIV epidemic in India is concentrated among the High Risk Groups (HRGs) and is heterogeneous in its distribution. The vulnerabilities that drive the epidemic are different in different parts of the country.

The national response to HIV epidemic has been swift and remarkably comprehensive since the time it was recognised as an important public health problem by the Government of India (GoI) during its early years. In response to the first HIV case identified in 1986, the government created the National AIDS Committee (NAC), which launched India's first AIDS programme in 1987. In order to effectively tackle the problem, the National AIDS Control Organisation (NACO) was set up in 1992 as an independent body within the Health Ministry, and National AIDS Control Programme (NACP) was launched. The NACP is being implemented as a comprehensive programme for prevention and control of HIV/AIDS and from the very beginning, has been designed to deal with the various aspects of the epidemic - understanding the gravity of the situation. The programme has focused on dealing with stigma; raising awareness and bringing a behaviour change

among the people at risk; efforts encompassing a national response and a more decentralized response at state level. NACP has been implemented through three phases, from 1992-1999, 1999-2007, 2007-2012, and is presently in its fourth phase (NACP-IV) which will be implemented till 2017. As understanding of the complex HIV epidemic in India has grown since then, substantial changes have been made in the policy frameworks and varied approaches of the different phases of the NACP have provided guidelines for India's response.

By the end of NACP-I several major accomplishments were achieved: awareness increased, screening of donated blood became universal and a decentralized mechanism to facilitate effective state-level response was established. NACP-II emphasised on Targeted Interventions (TIs) for HRGs, preventive interventions among the general population, and heralded the mainstreaming of HIV. During this phase, national policies on HIV/AIDS and Blood Safety were announced which provided strategic directions on the approach to contain the epidemic with decentralized planning and implementation.

The third phase of the program aimed at halting and reversing the HIV/AIDS epidemic in the country through prevention programs specially designed for the HRGs. It also integrated elements of the Care, Support and Treatment (CST) into the overall program implementation strategy. NACP-IV aims to accelerate the process of epidemic reversal and further strengthen the epidemic response in India through a cautious and well-defined integration process.²

¹ NACO. (2014). *Annual Report 2013-14*. Pg. 11 Retrieved from http://www.naco.gov.in/upload/Publication/AnnualReport/Annual report 2013-14_English.pdf

² NACO & DAC.(n.d.).*National AIDS Control Programme Phase-IV (2012-2017)*, Page 3. Retrieved from <http://www.naco.gov.in/upload/NACP-IV/NACP-IV Strategy Document .pdf>

The national response has met with major success demonstrated by the decline in the adult HIV prevalence from 0.41% in 2001 to 0.35% in 2006 and 0.27% in 2011. India has experienced an overall reduction of 57% in the annual new HIV infections among adult population, the numbers reducing from 0.28 million in 2000 to 0.12 million in 2011, reflecting the impact of various interventions and scaling-up prevention and treatment strategies under NACP. The HIV epidemic continues to be heterogenic in its geographical spread and across different typologies.

Underscoring the Indian success story is the trend in the HIV prevalence which has witnessed a significant decline among the antenatal clinic attendees considered a proxy for general population (0.49% in 2007 to 0.35% in 2012- 2013). The decline is evident among the HRGs, Female Sex Workers (5.06% in 2007 to 2.67% in 2011) and Men who have Sex with Men (7.41% in 2007 to 4.43% in 2011), and stable trends have been reported among Injecting Drug Users (7.23% in 2007 to 7.14% in 2011) at the national level. In addition, these intensified efforts in HIV prevention and treatment services have also resulted in a considerable decline in AIDS related mortality.

1.2: ART Services in India

The introduction of antiretrovirals (ARVs) in 1996 was a turning point for hundreds and thousands of PLHIV. Introducing Antiretroviral Therapy through the NACP was a phenomenal decision by the GoI. The Ministry of Health & Family Welfare (MoHFW), GOI, introduced free ART at eight centres during the second phase of the NACP in 2004. The programme adopted a public health approach for provision of ART. It provided comprehensive prevention, care and treatment services, with a standardized, simplified combination of ART regimen, bolstered with a regular secure supply of good quality ARV drugs, and a robust monitoring and evaluations system. Over the past decade, NACO through efficient planning and rapid scale-up has established HIV care and treatment program. To achieve universal coverage of ART for PLHIV, NACO has decentralized the ART services over the years. The programme has grown to a network of 512 ART centres and 1080 Link ART centres in 2015.³ **More than 0.88million patients are receiving free ART at these sites, which is the second highest in the world.**

³ NACO- Program Data/CST Division

⁴ NACO. (2014). *Annual Report 2013-14*. Pg. 11 Retrieved from http://www.naco.gov.in/upload/Publication/Annual Report/Annual report 2013-14_English.pdf

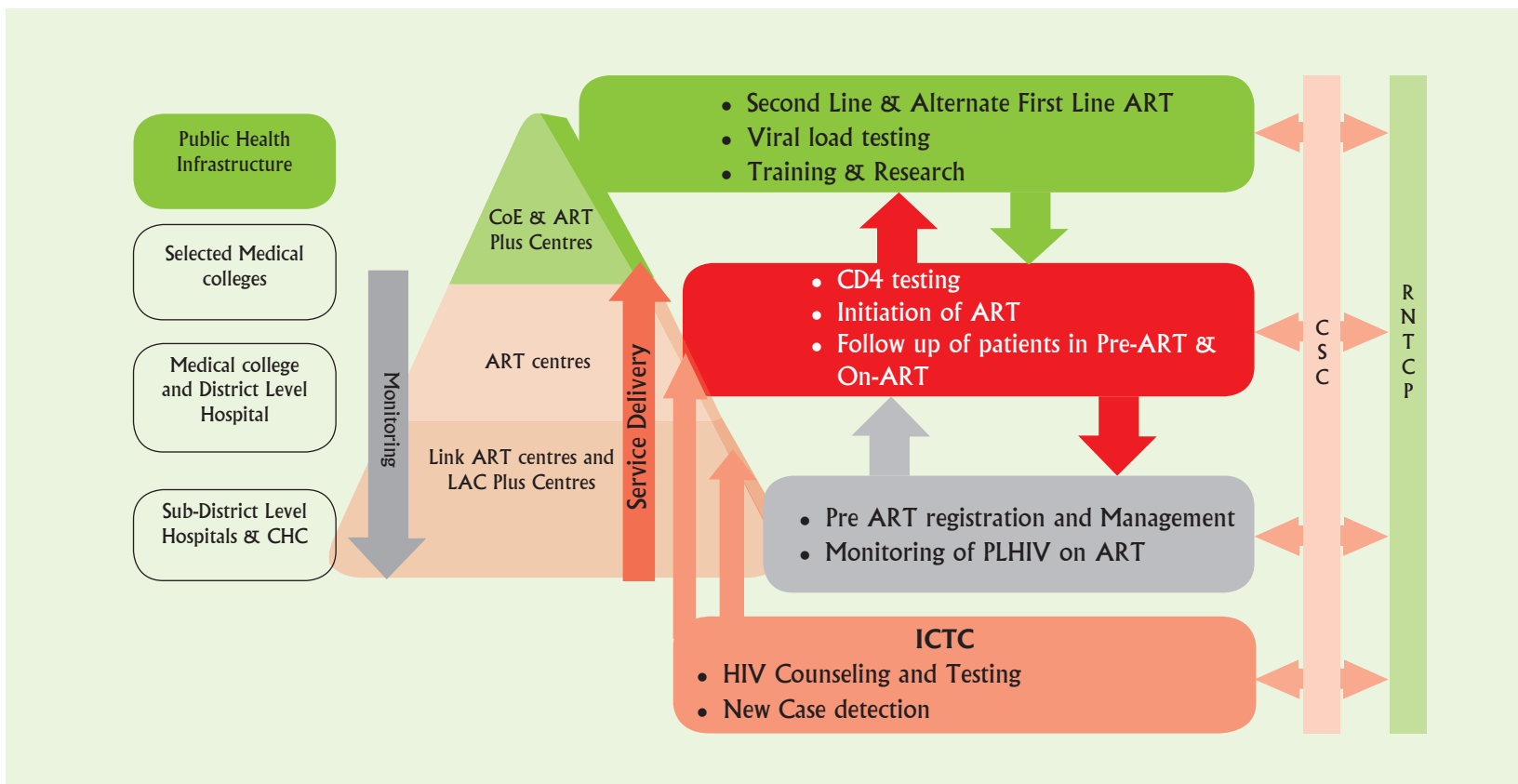
Wider access to ART has led to 29% reduction in the estimated annual AIDS-related deaths between 2007 and 2011. It is estimated that the scale up of free ART since 2004 has averted over 0.15 million HIV/AIDS related deaths. It is estimated that with the current pace of scale up will further avert approximately 50,000 – 60,000 deaths annually in the next five years.⁴

Model of ART Service Delivery in the Country

A three tier model of service delivery for ART has been developed by strengthening the existing health care systems. The existing health facilities are augmented by the NACO through the provision of additional technical, human and infrastructure support to establish an ART centre. (Figure 1.1).

- The ART centres form the anchor of this pyramid. They are located in the medical colleges and the district hospitals and are part of the Medicine departments of these facilities. Following referral of an HIV positive beneficiary from an Integrated Counselling and Testing Centre (ICTC), these facilities provide all the basic services to the PLHIV. These include regular investigations to assess the eligibility for ART services (“Pre-ART” services); management of opportunistic infections; provision of ART when found eligible; monitoring support to ensure adherence; and management of side effects and opportunistic infections (OIs). In the event that a patient is suspected of treatment failure, the ART centres refer the PLHIV to the State AIDS Clinical Expert Panel (SACEP) at the Centre of Excellence. Select ART centres in medical colleges have been upgraded to ART Plus centres. The latter provides all the services normally provided by an ART centre and in addition provides second line ART to PLHIV who experience treatment failure. In order to assess immunological status of the PLHIV, CD4 equipment has been made available in about 254 ART centres and the rest of the ART centres have been linked to the facilities with CD4 equipment.
- To facilitate the provision of tertiary level specialized care and treatment to complicated cases; training & mentoring; and operations research, ten Centres of Excellence (CoE) have been established in select teaching institutions in different parts of the country. Seven ART centres

Figure 1.1: Tiered Structure for ART Service Delivery and Referral Mechanism in Public Health System



have been designated as Paediatric Centres of Excellence. These centres provide HIV care to both paediatric and adult PLHIV. All ART and ART plus centres are linked to a designated CoE whose primary role is to monitor and mentor the ART centres on both programmatic and clinical aspects.

- In order to expand the geographical access to ART and decentralize services to the beneficiaries, NACO has decided to provide services through “Link ART centre” (LAC) at district and sub-district hospitals and Community Health Centres (CHCs), which are located closer to the patients’ residence. The LACs are linked to a Nodal ART centre which is within an accessible distance. LACs are responsible for providing drugs to the beneficiary at their facility, monitoring adherence to ART, side effects and OIs, and managing the latter wherever possible. These centres however do not decide the eligibility for ART and do not initiate PLHIV on ART. The LAC help reduce the cost of travel, time spent at the centre and hence helps in improving clients’ adherence to ART. The LAC Plus centres are an ‘upgraded’ version of LAC that also provide some “Pre-ART” services such as six-monthly collection

of blood samples for CD4 count testing. For monitoring purposes, the services and supplies at the LACs and LAC Plus are viewed as a single unit along with their nodal ART centre.

In addition, programme has Care Support Centres (CSC) that provide counselling, adherence and outreach support to PLHIV. These are managed by Positive Networks.

While expanding the scope of ART services, the need for the development of standard operating procedures (SOPs) was articulated by the NACP. The SOPs ensure quality and efficiency of the CST programme at the centres, and facilitates comparability of services across centres. Accordingly, NACO published the Operational Guidelines for ART services in 2007 for the first time in SE Asia region and revised them in July 2012. These guidelines provide detailed information not only about the required infrastructure, equipment, human resource needs and supplies at the ART centres, but also delineate the standards for the functioning of the centre. The guidelines describe the processes to be followed for patient management, including patient flow, appropriate recording and reporting, to ensure that the activities at the centre are well coordinated and documented.

Human Resources at the ART centre: The institutions with ART centres are required to constitute a multi-disciplinary ART team, led by the head of the institution (Dean/Principal/Medical Superintendent/CMO). The ART team consists of trained faculty from the departments of Medicine, Paediatrics, Microbiology, Obstetrics & Gynaecology, Biochemistry, Community Medicine, Surgery, Psychiatry, TB-Chest, Dermatology and Venereology. The institution head nominates a Nodal Officer for the ART centre (Head, Department of Medicine or another faculty member nominated by the Head) who is given the overall responsibility of operations, monitoring and mentoring of the ART centre.

The ART staff consists of the Senior Medical Officer (SMO), the Medical Officer (MO), Counsellors, Staff Nurse, Data Manager (DM), Lab Technician (LT) and Care Coordinator. Depending on the volume of PLHIV on ART, there is provision for additional positions of MOs, LTs, Counsellors and Nurses as stated in the National Operational Guidelines.

Trainings: To ensure optimal quality of care delivered across the facilities, it is important to have a team of trained human resources who are competent to manage the PLHIV clinically and effectively address the stigma that surrounds the disease. Various cadre specific training programs have been developed for the staff members employed at the ART centres.

Technical Guidelines: In 2011 the programme introduced early initiation of ART at a CD4 count of less than 350 and in 2012 it phased out Stavudine and revised the PPTCT guidelines while introducing the concept of “targeted viral load” for suspected treatment. National programme recommends ART for all PLHIV with CD4 count of less than 350 cells/cmm and irrespective of the CD4 count, for patients in stage III and IV (all HIV-TB co-infected PLHIV). In 2014, the national protocol for ART initiation was further revised to include all pregnant women and positive infants and children less than five years of age for ART initiation ART irrespective of CD4 count.

Linkages: Retention of PLHIV in care is the core focus of the programme. Structured mechanisms for linkages between ICTCs, PPTCT, LACs, ART centres and CoEs/ART plus centres have been developed to ensure early registration into “Pre-ART” care, improve access to ART services and minimise linkage loss at every stage. Cross linkages with RNTCP have been established at all levels

(Figure-1.1). In addition, linkages with other departments of hospitals have been established to facilitate specialised care and treatment of the PLHIV. PLHIV are also linked to care and support Centres for psycho-social support, monitoring of drug adherence, provision of counselling on home-based care and establishment of linkages with social welfare schemes.

Monitoring and Mentoring of ART Service Delivery

For ensuring robust monitoring, mentoring and supervision of ART centres, various states have been grouped into regions and Regional Coordinators (RCs) have been appointed by the NACO to supervise the programme in the respective regions. RCs assigned by the NACO, mentor and monitor the ART centres and ensure adherence to the prescribed quality of care. RCs also facilitate linkages and co-ordination among different departments and institutions at the regional and state levels. Representatives from State AIDS Control Society (SACS) are required to visit each ART centre at least once in three months to supervise the administrative work and the ART services. CoEs also monitor and mentor the ART centres linked to them on both programmatic and clinical areas.

Standardized tools for recording and reporting as well as for supervision are used across the country. These standardized tools include care and treatment Records, stock management Registers, referral formats, M&E formats and program performance monitoring formats. ART centres maintain patient Records and update operational information about each patient. They report to the State AIDS Control Societies/NACO through monthly reports. SACS analyses and consolidates the information emanating from the ART centres. It conducts quality control checks, provides supportive supervision, guidance and feedback. Additionally, it shares information with the state-level stakeholders and NACO. The NACO then compiles reports, analyses, evaluates and provides feedback to the SACS. NACO uses this information for evidence based planning and policy making.

1.3: Assessment of ART centres

Following a decade of ART service provision and substantial scale up of ART services across the country, NACO commissioned a country-wide assessment of the ART centres. The goal of the review was two-fold. One was to review the quality of ART service delivery in the country. The second was a validation of the data

recorded and reported by ART centres to understand data quality and integrity. NACO's Operational Guidelines for ART centres, July 2012 were used as the gold standard for comparing the services and program elements. NACO collaborated with the U.S. Centers for Disease Control and Prevention (CDC) and their implementing partner SHARE India, and WHO India for this assessment. A core team was constituted to coordinate the design, management of the assessment, analysis and dissemination of report.

The specific objectives of the review of the ART centres and services were as follows:

A) For quality of ART services:

- To assess the functioning of the ART centres;
- To assess quality of care provided under the CST component;
- To assess the performance of the ART centres and identify low performing units; identify the reasons and suggest measures to strengthen those units;
- To identify systemic problems/issues in order to try and address them;
- To assess the level of involvement of the host institution of the ART centre in order to explore the way forward for improving and or integrating ART services with general health services;

- To assess client satisfaction at the ART centres; and
- To identify best practices that could be replicated at other ART centres.

B) For data Validation at ART centres:

- To assess the records for completeness, consistency and correctness;
- To identify the ART centres with high (more than 5%) variance in recording and reporting; and
- To recommend steps for strengthening data quality.

The core team grouped the areas for assessment into four "domains" – **Operational, Technical, Monitoring and Evaluation (M&E) and Logistics**. Each of were further categorized into two or more sub domains, which were termed as "attributes".

Following the assessment, the gaps and recommendations for each ART centre were shared with the officials of the centre through a detailed centre-specific report. The data for all the centres in a state was collated to prepare state specific reports which were shared with the nodal authorities in each state.

Scope of the National Report: The present report is a national level collation of data from all the centres reviewed and intends to provide an overall perspective about the functioning of the ART centres in India. This report is a cumulative of the ART centres' reports, aggregated to provide a snapshot of the programme performance at national level. The report focuses on broad technical and programmatic areas that have an impact on the quality of service delivery and may have implication for policy making at the national level. This report is also intended to reveal areas of improvement, which may need further policy and programmatic actions. The report is expected to provide valuable feedback and identify specific areas which need to be strengthened to improve the quality of the ART services as a whole. The detailed ART centre level report with specific findings for the particular ART centre and recommendations for improvement have already been disseminated among the assessed ART centres and their respective states. Similarly, the state level reports with findings and recommendations have been separately circulated among the states. This report does not intend to make any inter-state comparisons or refer to the state specific contexts and program implementation issues which have been already discussed in the state level reports. Readers are requested to refer to the state and centre reports for specific contexts and details.

This report has also tried to capture examples of best practices from ART centres. Though most of the ART centres had developed innovative way of patient care and for achieving public health outcomes of the programme, all the best practices could not be reflected here and only one example of best practice under each attribute has been included in this document which does not, in any form, mean that other centres were not having best practices.





Chapter 2

Methods

2.1: The Core Team

For the purpose of this assessment, a core team was constituted to provide oversight to the various activities involved. The team guided the conceptualization of the assessment design; the processes involved in data collection, data entry, analysis, and interpretation; and the development of the reports. This team consisted of a total of eleven representatives of the CST Division of NACO, CDC and SHARE India (Annexure-I). The team provided overall leadership to the successful completion of the review and worked closely on issues pertaining to research design, field testing and finalization of tools (**Chapter-2.3**), identifying and training assessment team members, guiding the data management team, orienting data entry operators and analysts, identifying and training a report writing team, finalizing the reports, and developing a dissemination plan for the reports.

Data Management Team: The core team was supported by a data management team comprising of representatives from NACO, SHARE India and CDC. This team worked under the supervision of the core team to not only develop the tools for data collection, but also a guidance document for the reviewers on how to collect data using the data collection tools. The team further worked on the MS office Excel based software to ensure data entry, and compilation of data collected from the ART centres, provided inputs for the data analysis plan, and assisted in preparation of dummy tables and templates for the various reports.

2.2: Assessment Teams

The actual data collection at the ART centres was done by a team of 98 technical experts with at least a year of association with the HIV/AIDS programme.

Each expert possessed a comprehensive understanding of the ART programme, its objectives, delivery system and standard operational procedures for managing the centres. Following their selection, they were also provided special hands-on training for this exercise, with focus on the use of the review tools. Each ART centre was reviewed by a team of two (and sometimes three, depending on the case load of the ART centre) experts. Each team spent three days in each ART centre assigned to them. In the interest of maintaining objectivity, none of the reviewers was assigned centres that they were directly responsible for and/or managed.

2.3: Sampling

Sampling of ART centres

As mentioned in (**Chapter 1.2**), there were 453 ART centres in 2014 across India. All the ART centres that became functional by March 2012, and therefore had been operational for at least one year by April 01, 2013, were selected for this review. The actual data collection began between January 2014 and March 2015. Based on these criteria, 367 ART centres were selected for this study. Of these, 357 centres were assessed in all. One of the prerequisites for an ART centre to be part of the assessment was for the centre to have a completed Master Line List (MLL) and ART Monthly report for data review. Thus, 10 centres (nine centres from Mumbai and one from Chhattisgarh) that had not submitted the MLL could not be assessed as part of this exercise. Of the 357 assessed ART centres 150 were located in district hospitals, 152 in Medical Colleges, 35 in subdistrict hospitals and 20 in public private partnership (PPP) model/other hospital. The distribution of 357 centres based on location of the facility is shown in **Figure 2.1**. Of the 357 ART centres assessed, 10 were CoEs, six PCoE, 35 ART plus centres and 306 were ART centres.

Figure 2.1: Distribution of ART centres reviewed - by location

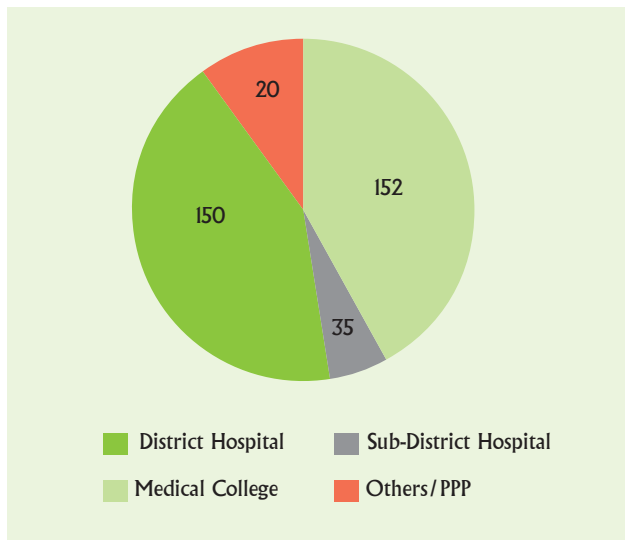
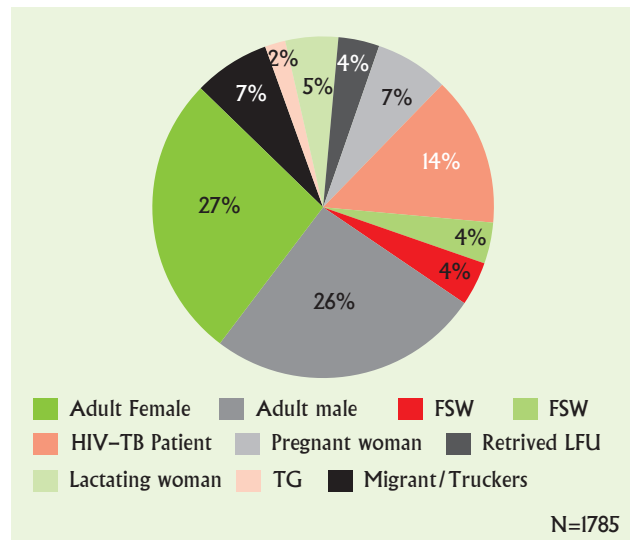


Figure 2.2: Distribution of beneficiaries interviewed



Sampling of Respondents

The respondents for this review included both the health personnel working at the ART centres as well as the PLHIV who were beneficiaries availing services at these centres.

Among the health personnel, the Nodal Officer, Senior Medical Officer, Medical Officers and Staff Nurses were interviewed for this review. A maximum of two Counsellors were also interviewed from each centre. In case there were more than two Counsellors at the centre, then the junior most and senior most were chosen from among them, preferably one male and one female Counsellor. A total of 281 Nodal Officers, 183 Senior Medical Officers, 368 Medical Officers, 270 Staff Nurses and 618 Counsellors were administered the respective questionnaires.

Five beneficiaries were also interviewed from each ART centre, to understand their perspective about the services being provided and assess their satisfaction levels. In order to understand the concerns of PLHIV and the issues faced, the core group felt that it was imperative that the experiences of PLHIV belonging to various groups or typologies be documented as part of this review. In order to ensure this, PLHIV were selected from various groups:

- Belonging to a high-risk group (FSW, MSM, IDU), or a vulnerable group (such as truckers/migrants),
- lost to follow-up (LFU) case which had been retrieved,
- HIV-TB co-infected,

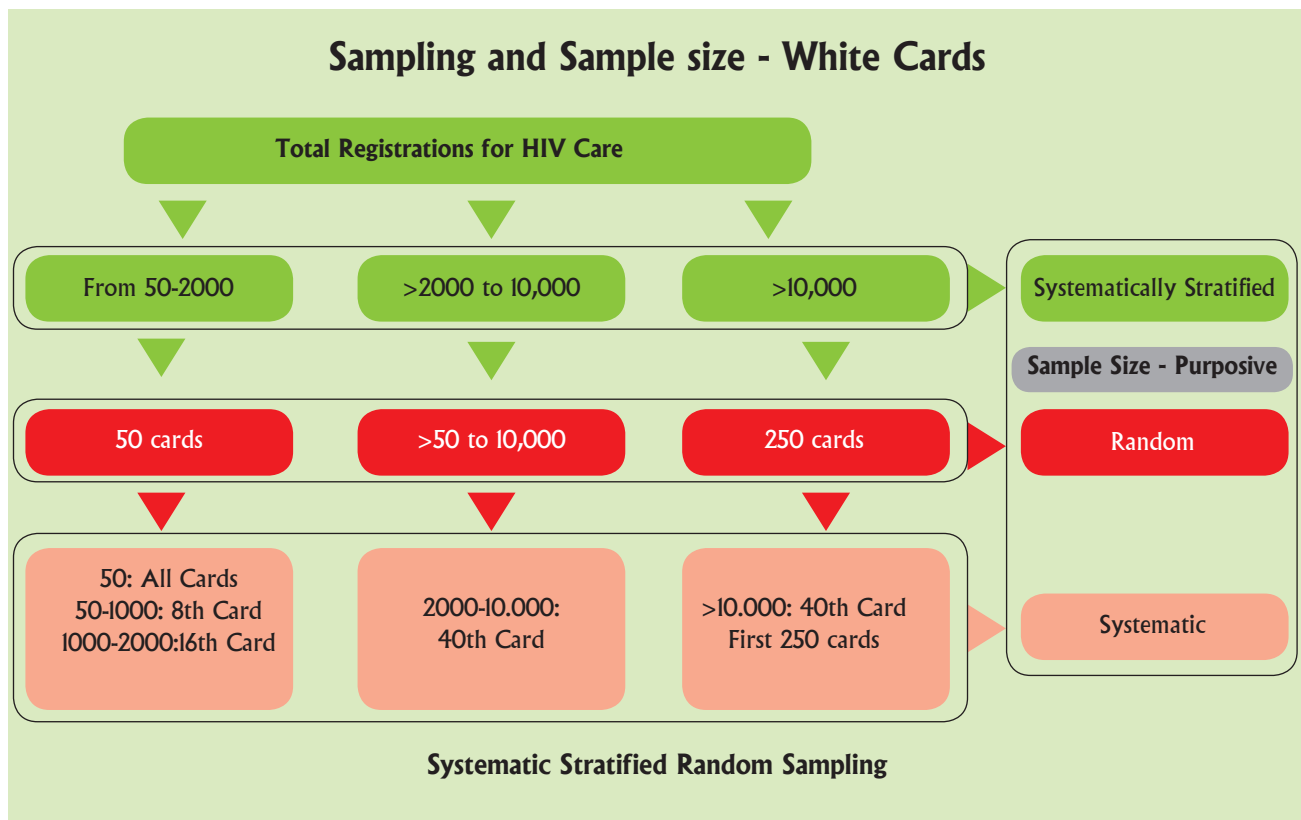
- Pregnant and lactating women,
- Men and women from the general population.

The reviewers were asked to purposively select beneficiaries from these categories for the interview in a random manner. If such beneficiaries were not in attendance at the time of the review, or were less than five in numbers, men and women from the general population were selected for the interview. In all, 1,785 beneficiaries were interviewed which included 892 men, 857 women and 36 transgender. The distribution of the interviewed beneficiaries is provided in **Figure 2.2**.

Sampling of Records

In order to validate data, the reviewers compared the data from individual patient treatment cards (known as “White cards” in the CST programme) with the ART centre Monthly Report (CMIS) and the centre-specific Master Line List (MLL) of all the PLHIV, ever registered at that ART centre. The total registrations recorded in the MLL by each ART centre till October 31, 2013 formed the universe for sampling of records. A 10% sample, to a maximum of 250 patient treatment cards, was drawn from the MLL of each centre using a stratified systematic random sampling process. The data was stratified by years to ensure sampling from all the years since 2005. This process not only ensured an unbiased review of records, but also ensured adequate representation of various patient categories. The random list was pre-drawn by the data management team, and the registration numbers of the

Figure 2.3: Illustration of the process for sampling and sample size



sampled records were shared with the assessors before they visited a particular ART centre. The reviewers shared the list of White cards selected through this random sampling procedure with ART staff. The sampled record details were verified and validated for correctness, completeness and consistency across the patient treatment card, MLL, Monthly report, ART register and the “Pre-ART” register.

2.4: Data Collection Tools

The data collection tools were designed to assess the performance of the centre in the four “domains” – Operational, Technical, Monitoring and Evaluation (M&E) and Logistics. Each of these domains was further categorized into two or more sub domains, which were termed as “attributes”. The list of the domains and the attributes is provided in **Table 2.1**.

Two tools were prepared for this review – Tool A and B. Tool A was qualitative in nature and consisted of five sub-sections, each covering an attribute, except for the **Chapter 2.1**, which covered three attributes. Tool B, on the other hand, was an excel sheet based tool, which was used for data validation, assessing the technical aspects of service delivery as well as inventory

management. This tool consisted of 11 worksheets. These were designed in such a way that data was auto-generated in sheets 1, 6, 10 and 11, and the reviewer was not required to enter any information on these sheets. This tool was used by the data management team to share the list of records sampled from the MLL of CMIS.

The interview schedule for the health personnel consisted of questions which assessed their technical knowledge and gathered their perspectives on job satisfaction. The beneficiary interview checklist was designed to assess the end-users’ perspectives about the availability, accessibility and quality of services at the ART centre and their satisfaction level with these services.

As can be seen from **Table 2.1** below, a mix of qualitative and quantitative data collection methods were adopted which included observations, interviews and review of records and registers. However, the analysis of data was primarily quantitative (scoring) (**Chapter 2.7**).

The checklists were pre-tested and standardized before use. One high case-load and one low case-load ART centre in the states of Delhi in the north and Telangana in the south were chosen as pre-testing sites.

Table 2.1: Summary of the Domains, Attributes and their tools

Domain	Attributes	Tool and Section	Source of data
Operational (O)	Infrastructure	Tool A – Section 1	Observation
	Human Resources	Tool A – Section 2	Discussion with health personnel at institutions; Observation of HR records.
Technical (T)	Counselling	Tool A – Section 3	Interview with a) Counsellor and b) beneficiary using pre-designed questionnaire.
	Referrals and Linkages	Tool A – Section 4	Interviews with beneficiaries, Medical Officers and Nodal Officers; Review of registers and records
	Infection Control Procedures	Tool A – Section 4	Observation
	Attitude Towards Patients	Tool A – Section 4	Observation; Review of records; Interview with beneficiary.
	Technical Service Delivery	Tool B – Section 6	Review of “Pre-ART” and ART registers
M&E (M)	Reporting	Tool B – Section 7	Comparison of MLL & White card; Review of ART and “Pre-ART” registers
	Recording	Tool B – Section 8	Observation – availability of guidelines, Office Memorandum among others; Review records and registers for completeness.
Logistics (L)	Inventory Management	Tool B – Section 9	Review of pharmacy records
	Financial System	Tool A – Section 5	Interviews with Medical Officers and Nodal Officers

Guidance Document: The core team developed a detailed document for the reviewers to guide them through the process of using the two tools (**Chapter 2.5**), the scoring pattern, grading, and even the providing feedback with the facility in-charges and nodal persons. Along with the description of the two tools, the document provided detailed guidance for interviewing the Nodal Officers, Medical Officers, Counsellors and the beneficiaries.

2.5: Data Collection Process

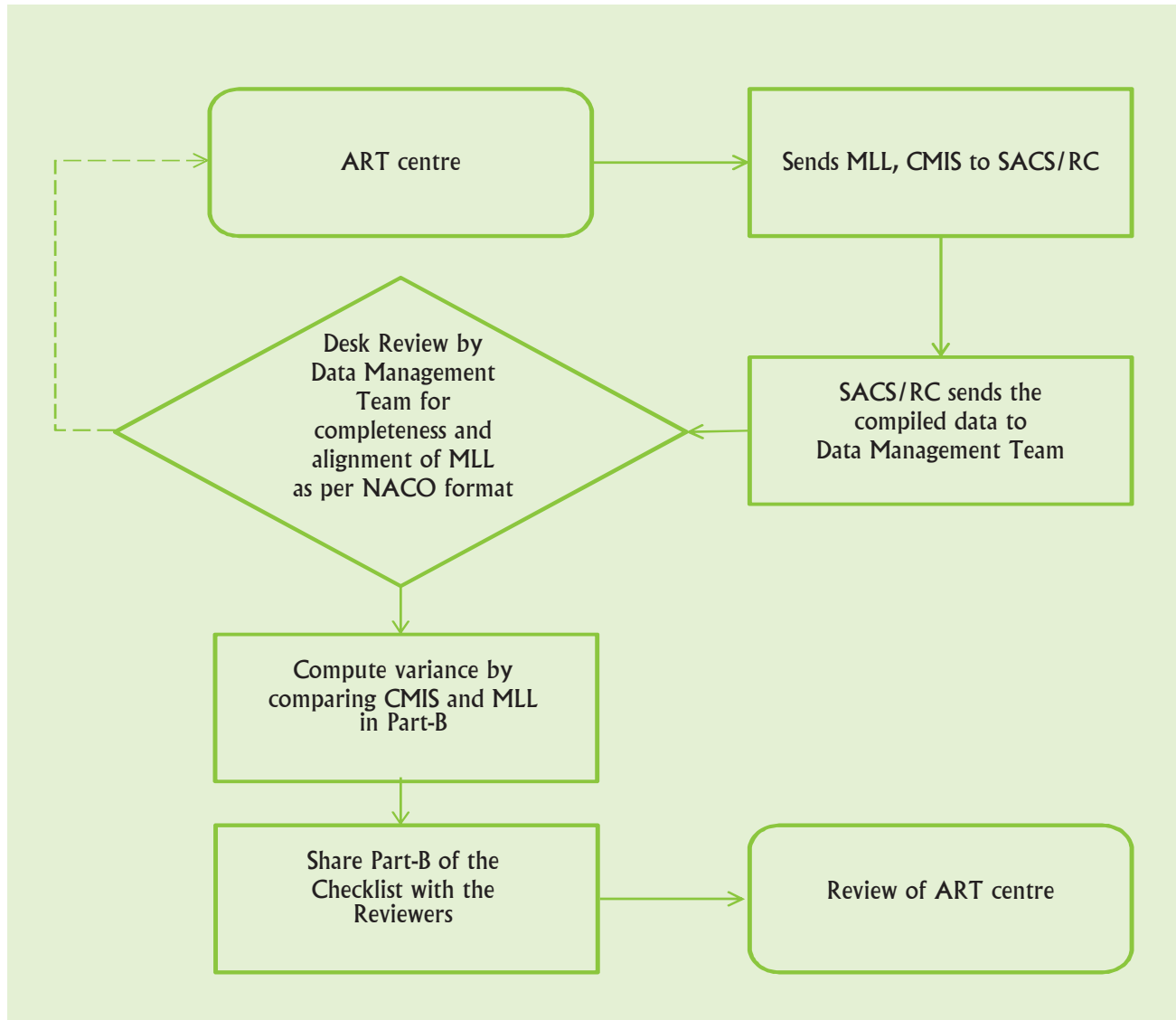
The review was conducted in two phases: i. Desk Review; ii. Onsite assessment of facility.

Desk Review

A desk review was carried out in the first phase with the objective to assess data quality. This phase was relatively short. It consisted of two activities:

- 1) Verifying the completeness and consistency in reporting of ART centre’s monthly report and MLL; and
- 2) Carrying out a preliminary review of some of the core indicators of service delivery through data reported in the ART centre’s monthly report and MLL. This review allowed the assessors to flag issues requiring exploration during the field visits.

Figure 2.4: Illustration of Desk Review



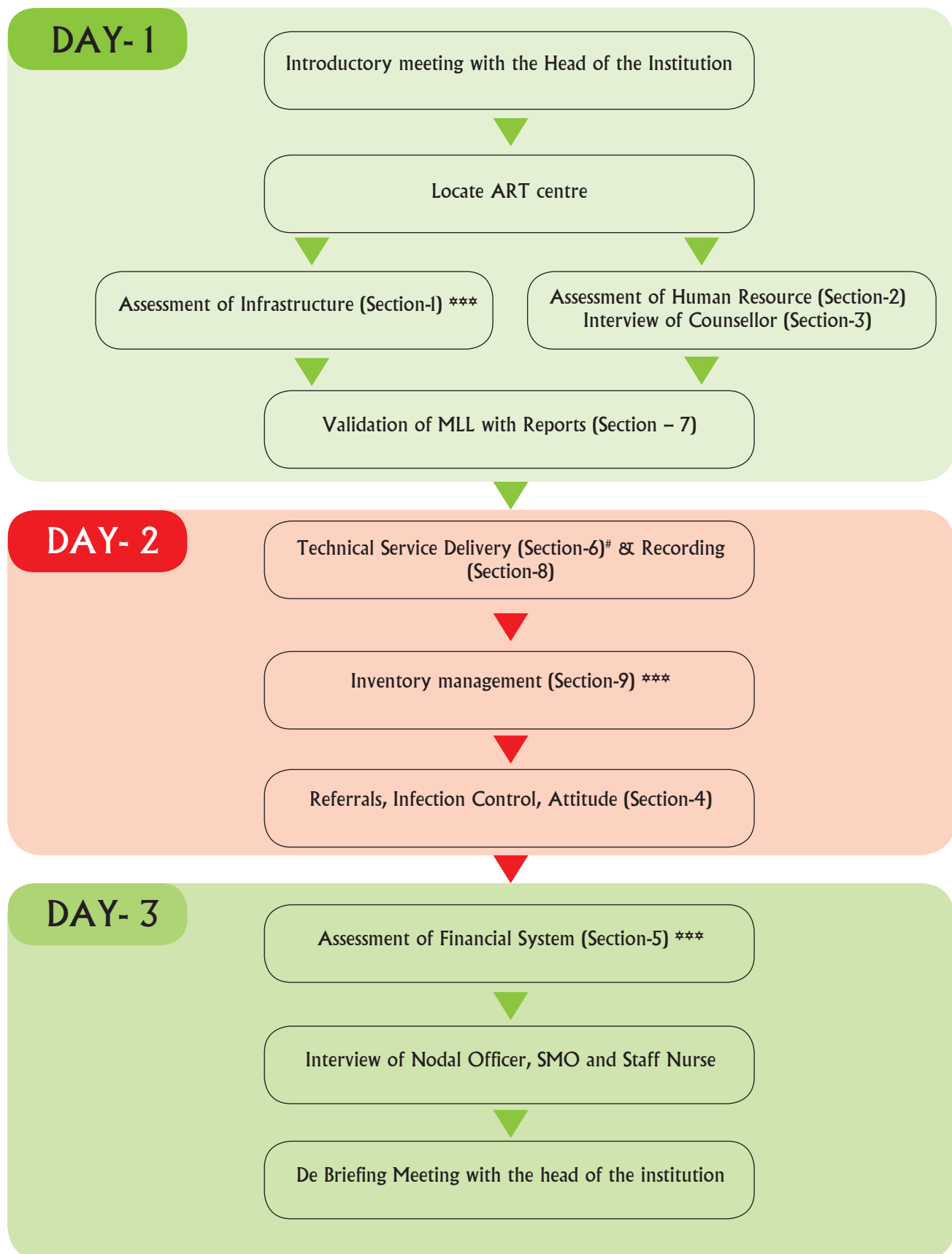
Data validation continued during the onsite assessment by comparing different reports and records to each other and to the MLL in order to identify discrepancies. The drawing of the sample from the MLL as mentioned in **Chapter-2.2** supported the process of data validation.

Onsite Assessment

Teams of two to three reviewers were formed based on the load at the assigned ART centre for the onsite review. Both checklists A and B were used during the

onsite review. The reviewers dedicated three days to each facility. The process followed at the site during these three days is described in **Figure 2.5**. As can be seen, beneficiary interviews were spread across all three days to get the maximum options in beneficiary profile, and increase the chances of interviewing those belonging to the HRG or vulnerable groups. The onsite review includes an in-briefing and a debriefing with the facility in-charge and the Nodal Officer of the centre at the beginning and end of the visit respectively.

Figure 2.5: Flow-chart for on-site Review Process



*** Interview 1-2 beneficiaries per day

Sections are part of checklist



Data management centre, CDC office, Hyderabad

2.6: Confidentiality and Ethical Considerations

Confidentiality of data, especially which is related to the health status of an individual, is a major concern in any assessment/review. The need for maintaining confidentiality of the PLHIV is critical given the stigma attached to the disease and the discrimination faced by the PLHIV. Therefore the review made concerted efforts to ensure confidentiality at every step of data collection, compilation, analysis and storage. All reviewers had to sign a copy of data confidentiality form before carrying out the actual onsite visit and assessment. Reviewers were given specific instructions (during the training as well as in the guidance document) not to carry away any original/photocopies of documents from the ART centre. The entire data validation had to be carried out onsite, during their visits. There were also forbidden from clicking any photographs or recording videos of the ART centre. Consent was sought from the beneficiaries who were interviewed as a part of this assessment and each respondent signed a consent form. Care was taken to omit personal identifiers in the form to ensure that the individual beneficiaries should not be traceable from the response forms.

A separate unit with dedicated internet and password protected system was created for data management to ensure confidentiality. The hard copies of the assessment checklists were kept under lock and key and access to the documents was controlled (**Photograph**).

2.7: Data Entry and Analysis

Scoring

Each of the four domains and the 12 attributes were assigned numerical scores. However, it can be seen from **Table 2.2**, scores across different attributes and domains were not equal and carried different weights based on the ‘perceived’ importance of that area in the optimal functioning of the ART centre. The weights were assigned following a detailed discussion in the core team. For example, among the 12 attributes, the “Technical Service Delivery” was weighted the highest with a maximum possible score of 29. The maximum weighted scores across all four domains added up to 100. For validating the data, the discrepancy between records was checked by comparing key pre-identified fields across different records and registers, and the variance between the different sources was measured in terms of percentage (data fields that reflected a discrepancy as a proportion of the total number of fields assessed).

Within each attribute, there were a number of elements and sub-elements. For example, within the “Infrastructure” domain, “Space (for the ART centre)” was one of the attributes, which was further sub-divided into various sub-elements such as “Access”, “Adequacy”, and “Maintenance” among others.

While the assessors were required to fill all the data fields in the tools, they were not required to generate the scores for a centre, especially from the tool A. The scoring was generated by the data management team after checking the forms for completeness and internal consistency.

Grading

Scores for each attribute under a domain were added up to give a total score for each of the four domains, which were totalled up to give the complete score for the ART centre (out of a maximum of 100 points). Based on the score obtained for each of the attributes, collective grading for each of the domain was done on scale of 5, with the lowest being graded 1 (Very poor) and the highest being graded 5 (Excellent). These grades did not follow a perfect quintile distribution (see **Table 2.2**). The core team felt that a collective score for the facility might not be very helpful in understanding where the successes and challenges lay; therefore grades were given across each of the four domains to better understand the situation of the ART centre. Thus, each facility was given a domain wise grading captured as O...T...M...L... The grading pattern for each of the domains was based on the score calculated as a percentage of the maximum weighted score allowed for each domain.

Data Entry

The assessors used physical copies of the completed tools for recording the data for the Tool A. These

were later sent by post to the data management centre at Hyderabad, where the data was verified for its completeness and internal consistency by the data management team. It was then entered into excel-based data management software for generating the scores and grades for that facility.

As tool B was an excel sheet, the soft copy of the tool was loaded on to a tablet/laptop and was used by the assessors to enter information. The tool, as explained above had in-built output sheets that auto generated certain scores as well as the percentage variation in the ART centre data among others, which were used by the assessors during the debriefing sessions. The assessors sent the filled in excel sheets over email to the data management centre at Hyderabad, who used this along with information from tool A to generate a complete data set for the facility, the state and the national level reports.

The tools were designed to capture the qualitative description of the observations for each attribute. These were used to develop proposed action plans for each centre in the states.

Table 2.2: Scoring of Domains and Attributes, and overall grading of the centre

Domains	Attributes	Max weighted scores	Collective Grading of domains (O.. T.. M.. L..) on scale of five	
Operational (O)	Infrastructure	7	5 – Excellent (90-100%)	
	Human resources	8		
	Sub Total	15		
Technical (T)	Counselling	10		4 – Good (75-89%)
	Referrals and Linkages	4		
	Infection control procedures	3		3 – Average (55-74%)
	Attitude towards patients	2		
	Technical Service Delivery	29		
	Sub Total	48		
M&E (M)	Reporting	10		2 – Poor (30-54%)
	Recording	17		
	Sub Total	27		
Logistics (L)	Inventory management	9		1 – Very Poor (0-29%)
	Financial system	1		
	Sub Total	10		
Total		100		

Data Analysis and Reporting

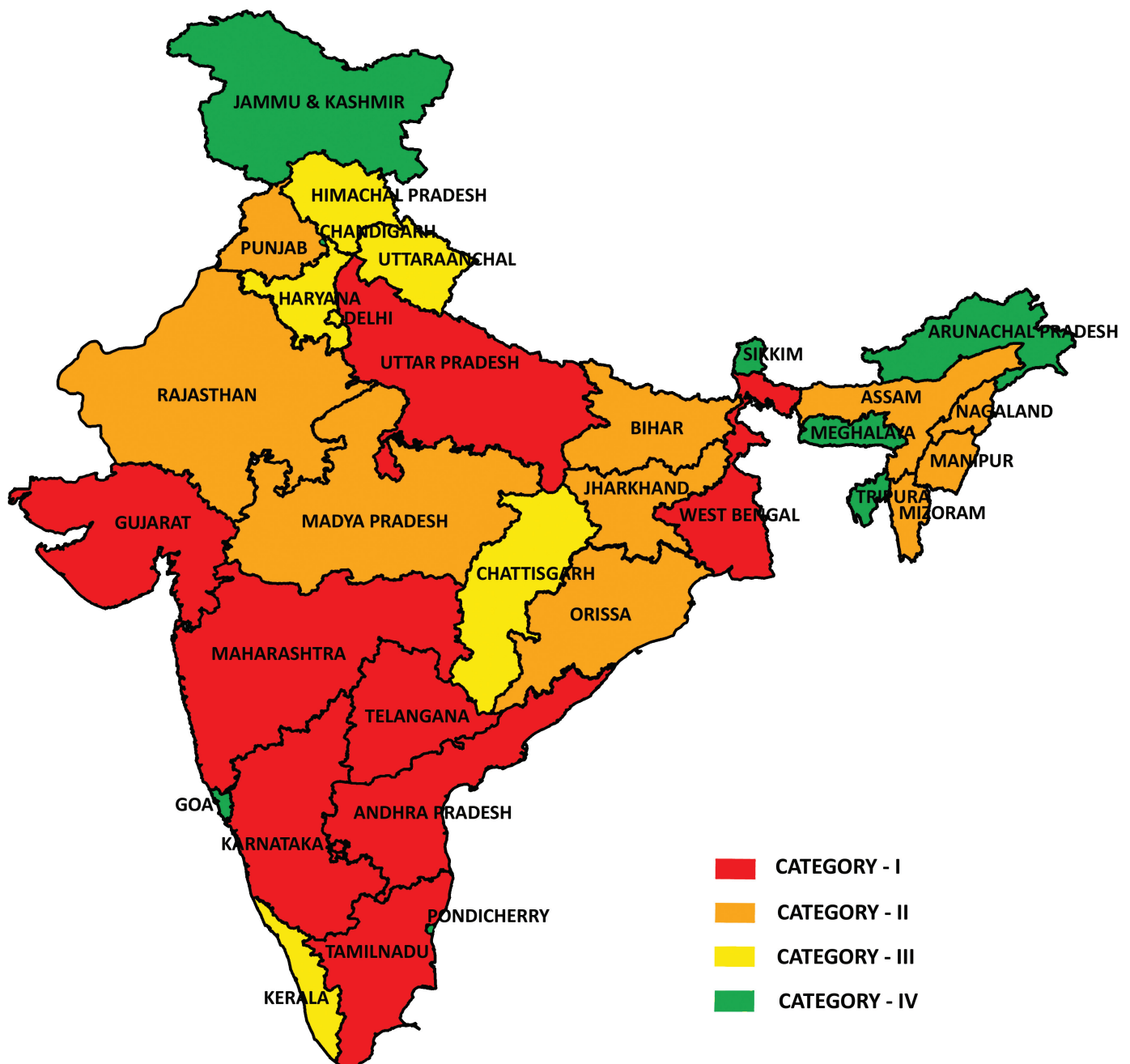
This was done by the data management team using the MS Excel software. Scores and grades across each domain were generated. The detailed status of each element, sub-element and the overall scores and grades were shared in the form of a centre-specific report with each of the ART centres assessed as part of this study.

Data from all the centres in one state was then analyzed as a whole to generate State-specific reports. The report compared the various centres within the state with each other as well as captured the overall successes and

generic gaps across the state. These were used to make state specific recommendation, with a special focus on the actions required at the state government level to improve the facilities and services at the ART centres.

Under NACP-IV, the states have been divided into four categories based on the disease burden, geographical conditions and maturity of epidemic. This report follows the categorization to describe the findings for the benefit of the readers. This report does not focus on inter-state comparisons, but rather on the difference in the performance of ART centres across these four categories.

Figure 2.6: Geographical distribution of categories

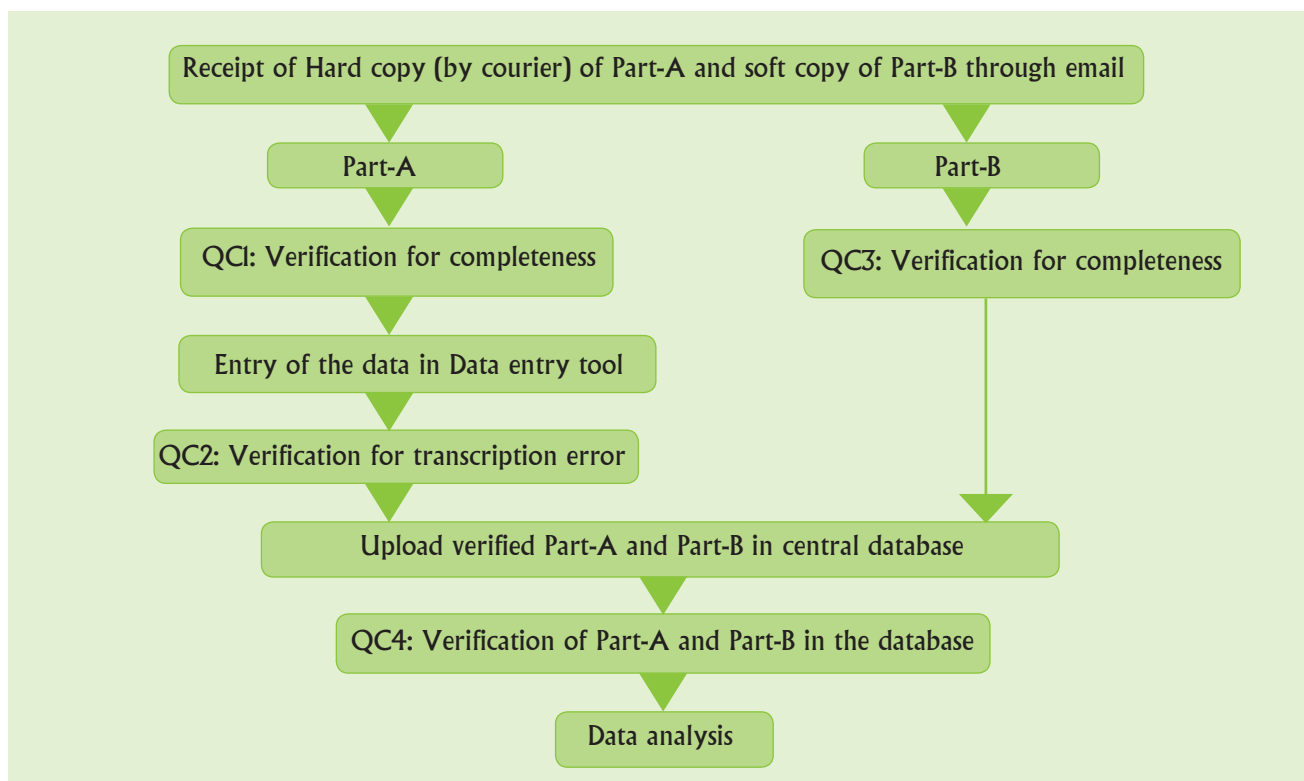


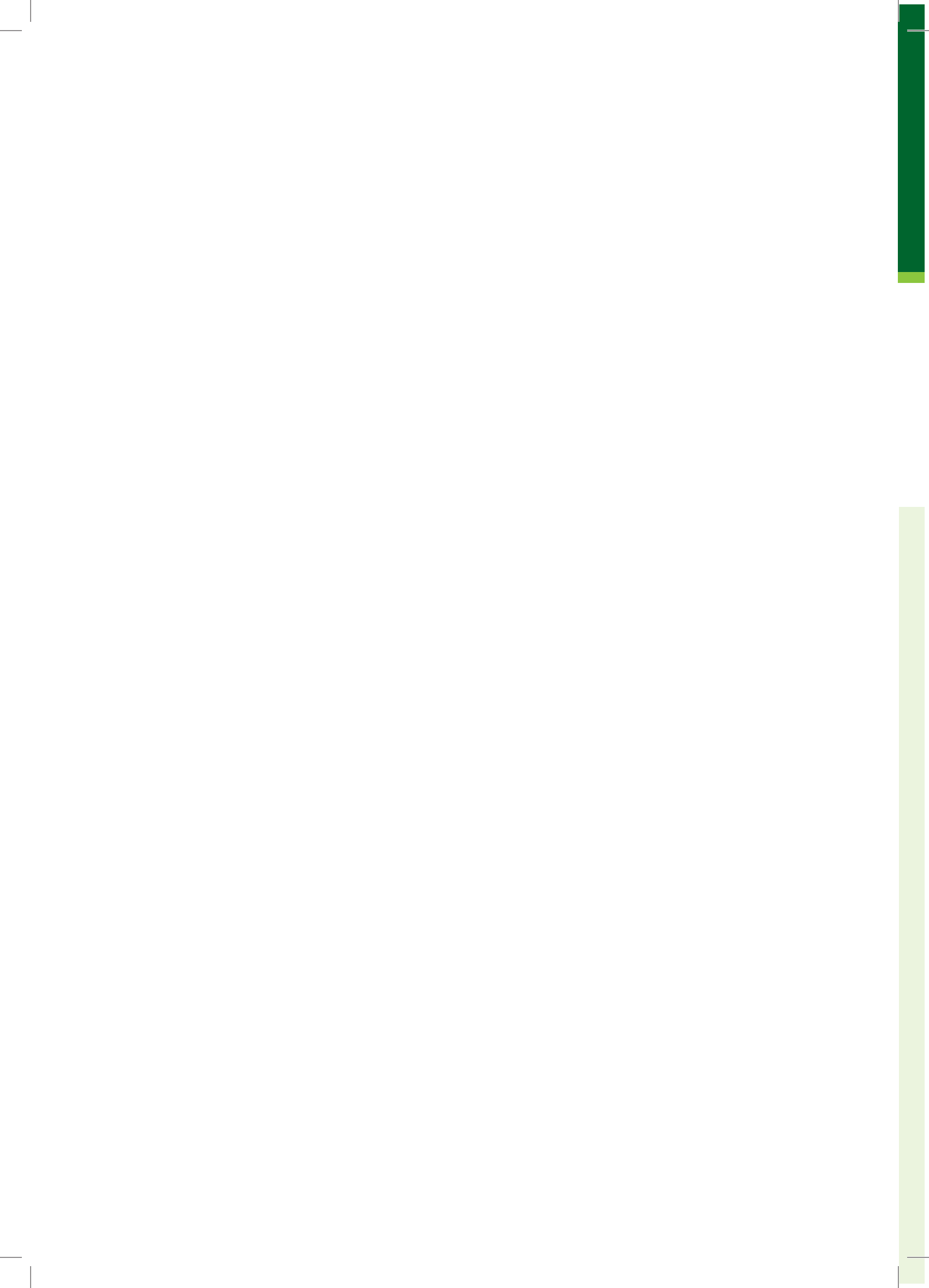
2.8: Quality Assurance

Multiple steps were taken to ensure data quality at all levels of data management (collection, compilation, validation and analysis).

- The detailed guidance note to the assessors, with objective criteria for scoring relatively subjective issues such as access to the ART centre, ensured a uniform method of scoring across the centres and limited the possible effects of inter-observer variation.
- The features built into the MS Excel based data validation tool for internal consistency prevented entry of incorrect data at the field level. The features include:
 - ▶ **Validation:** Only one score could be entered for each indicator. Attempts for multiple entries generated an error message.
 - ▶ **Auto Generation:** Scores for most of the indicators related to technical service delivery and correctness of reporting were auto-generated based on the inputs provided in the relevant sheets.
 - ▶ **Skip Patterns:** Skip patterns were in-built to direct the user to the cells that need to be filled (after skipping those that need not be, based on the type of data entries) and also defined the sequence in which data needed to be entered.
- ▶ **Auto Calculation:** The total scores and weighted scores were auto generated in the Data Validation Tool. If there were indicators that are not applicable, then the calculation would get adjusted (changes in the denominator), automatically.
- ▶ **Password Protected:** The tool B was password protected. The reviewer was not able to delete or insert any rows or change any formulae in the tool.
- ▶ **Transcription Rree:** Wherever applicable, drop down lists were provided for data entry to avoid transcription errors.
- Following the receipt of tools at the data management centre, the forms were checked for completeness of information physically, by checking whether all the relevant data fields had been filled.
- In order to avoid transcription errors, especially for Tool A, the Program Manager conducted a field by field comparison of all the physical forms (Tool A) and the data entry in the computer to ensure that there were no mismatches due to errors in data entry.
- The data management software merged information from tools A and B to check for any errors. For example, it ensured that the number of patients on ART did not exceed the total number of patients registered at the centre based on the MLL.

Figure 2.7: Illustration of Data Management





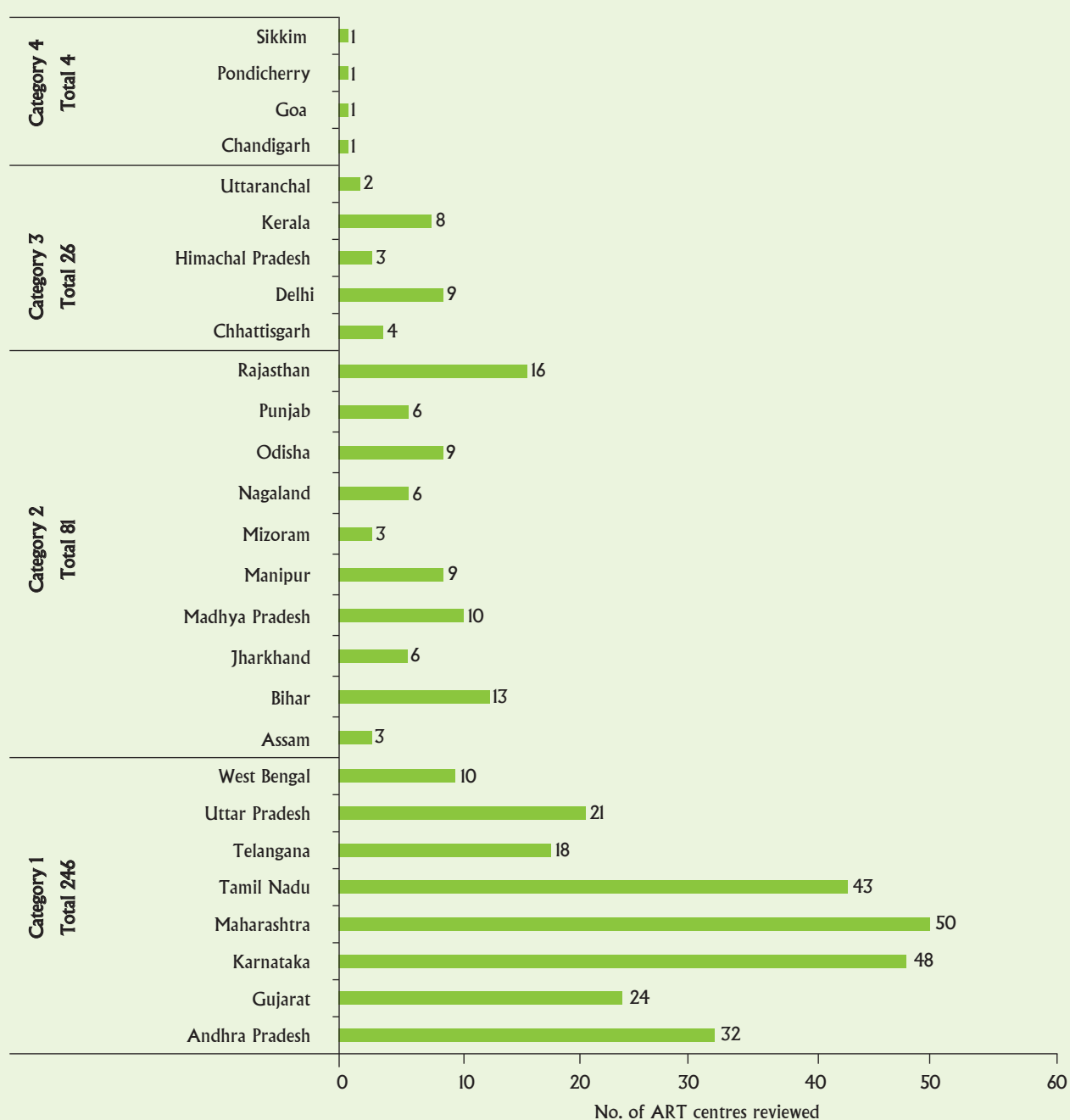
Chapter 3

Findings

This section presents the findings of the assessment collated for the 357 centres. The geographical distribution of the centres is depicted in **Figure 3.1**.

The findings need to be interpreted in light of the existing health systems, as the ART centres are not stand-alone facilities but are situated within facilities

Figure 3.1: Number of ART centres reviewed across the states (state categorization as per NACO)



that cater to other health needs of the population. Inter-state comparisons have therefore been avoided keeping in mind the differences across the health systems in the states. The successes and the areas for improvement have been highlighted as well in this and ensuing chapters. The findings of this review have been presented for each domain and the attributes pertaining to the domain.

3.1: Operational Domain

The Operational domain assessed two input elements that are vital for the success of any public health program - infrastructure and human resource. Thus, these two formed the critical attributes under the domain. They were weighted almost equally by the core team, with a maximum score of 7 and 8 respectively. It must be kept in mind that while the availability and management of the human resource has been captured in this domain, their (SMOs/MOs/Counsellors) actual knowledge and skills have been reviewed under the Technical domain (Chapter-3.2).

3.1.1 Attribute : Infrastructure

The parameters assessed under infrastructure included the availability of Space, Equipment along with functionality and Maintenance of the building, wherever applicable. The reviewers observed for the presence of signages directing towards the ART centre, availability of a waiting area, display of IEC in the waiting area, pharmacy, presence of separate rooms for ART staff, medical equipment and the maintenance of the ART centre. The basic facilities at the centre, such as safe drinking water and clean toilets, both for the staff members and patients were also observed.

Of the 357 assessed ART centres, 150 were located in Medical Colleges, 152 in District Hospitals, 35 in Sub-district Hospitals and 20 in public private partnership (PPP) model/other hospitals. The operational guidelines for ART centres stipulate that the centre should be preferably located near the medicine OPD to allow easy access. It further states that a signage with directions in the local language should be displayed to guide the patients to the centre irrespective of the location of the ART centre.

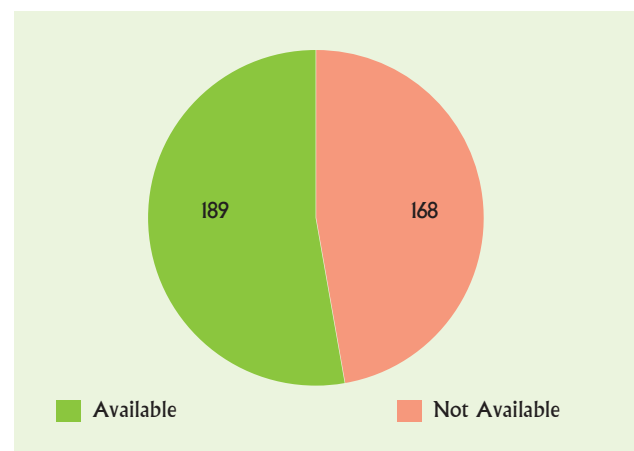
Accessibility: In order to assess whether the centre was easily accessible or not, the reviewers were instructed to mimic the condition of a beneficiary referred to the

centre by trying to reach the ART centre through the guidance of the signage. About 87% the centres had signages displayed, of which 168 had adequate signage boards, using which the patients could easily reach the ART centre. However in 142 centres the sign boards were either not appropriately located and/or were not in the local language. The rest of the centres (47 of 357), did not display any signage. A quarter of centres without any signage were from Maharashtra.

ART operational guidelines prescribe the ART centres to follow a method of patient flow for operational reasons and patient convenience. This patient flow was followed as per guidelines in 90% (321) of centres either completely or partially. However, thirty six (10%) centres did not follow any form of patient flow (Maharashtra-7, Bihar-5, Manipur-3, Chhatisgarh-2 and others). In the remaining 142 centres it was being partially followed. Few patients, especially those who had been on ART for a long time were not visiting the Counsellor and Doctor during their each visit. High patient load and space constraints were the observed reasons for the lack of adherence to the patient flow.

Information on the availability of a system for fast tracking pregnant women/children/cough symptomatic was displayed as per guidelines in almost 60% (211) centres. However, nearly 40% (146) centres had not displayed any information on fast tracking (Maharashtra-25, Karnataka-13, Andhra Pradesh-12, Uttar Pradesh-13, Bihar-9 and others). Furthermore, many of the ART centres which had not displayed this information were found to be practising fast tracking pregnant women/children/cough symptomatic by directing them at the entry point.

Figure 3.2: Directions and Signage at the facility to locate the ART centre



Adequacy: The ART guidelines also specify the dimensions and layout of the physical space of the centre. It is expected that each centre has a waiting area for the patients and it must contain a display of IEC material (posters and electronic media). Separate chambers or partition must be allocated to each Medical Officer, and Counsellor working in the facility. Other service related areas such as the blood sample collection area and the pharmacy needs to be designated. However the pharmacies in 40% of the ART centres will need to strengthen their efforts for space, storage and shelving as the space allotted to the pharmacy was inadequate or there was excessive humidity, which can lead to reduce shelf life and increase wastage of the ART drugs. Along with this, basic patient conveniences such as a clean functional toilet and drinking water supply must be made available to ensure a comfortable experience for the beneficiary attending an ART centre.

While interpreting the results of this assessment with regard to adequacy of space, it is important to bear in mind that the ART centres have been created within existing facilities, and investments have not been made to create new infrastructure. Thus, the parent institution, in most cases, has worked out the best possible infrastructural solutions within the available space. Despite this serious limitation, as can be seen from **Figure 3.3**, more than half of the facilities met most of the parameters set out in the operational guidelines. In another third of the centres, there was a designated space for the various functions, but either it was inadequate, or not clearly demarcated as per the guidelines. A separate area for counselling services with adequate audio visual privacy was the least available among all the areas/rooms required for a well-functioning ART centre. Less than half the facilities

(48%) had ideal counselling areas. In another one third, while the Counsellor had an area to himself/herself, it either did not have walls or was positioned in such a way that it did not ensure the required privacy.

To ensure that the time spent by the beneficiary at an ART centre is comfortable and well-utilised, certain basic utilities (such as toilets and drinking water) and additional services (display of IEC material either in print or using electronic media/easy access to condoms) are recommended at an ART centre.

While more than two-thirds (68%) of the ART centres had toilets for the patients, more than half of the available toilets were not clean. Similarly, while over 80% of the facilities had arrangements for drinking water for the patients, its safety for drinking had not been ensured. More than 75% of the facilities had condom boxes available at the ART centre. In some cases however, the product was not easily accessible either due to its placement or because it was not labelled appropriately.

A well displayed patient’s charter or a list of available services is vital for ensuring accountability of the health services. The ART centres are required to display the timing of the health facility (ART centre), the services available therein - including linkages to other centres and social welfare schemes (Bus fare concession and provision of pension schemes to PLHIV on ART) managed by the centre, as well as the name and contact details of the service providers. About 81% of the facilities have displayed a patient charter. In some cases, the display was missing one or more elements of the basic information required.

Figure 3.3: Availability of recommended space and Lay-out at the ART centre

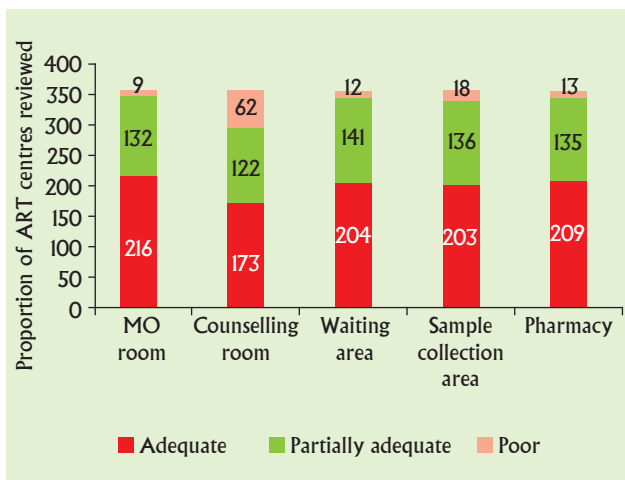
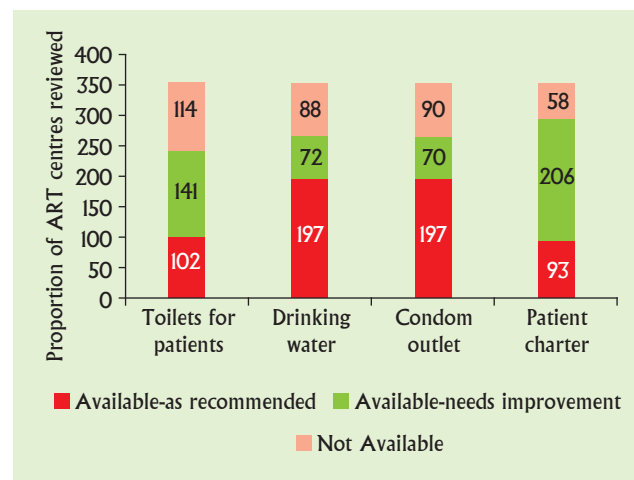


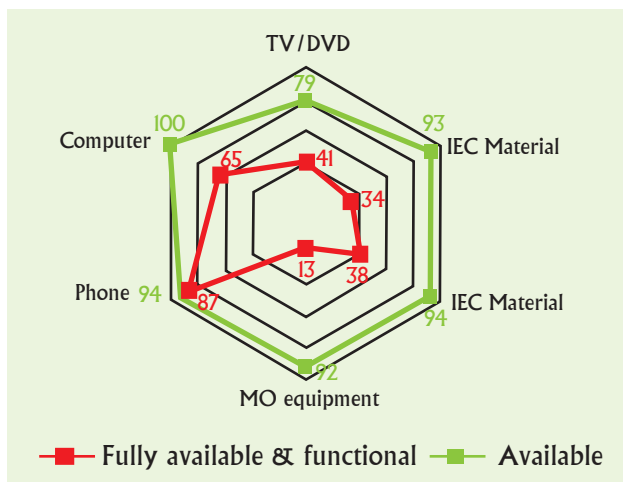
Figure 3.4: Availability of patient conveniences at the ART centres



Apart from the infrastructure discussed above, the centres require equipment to function efficiently. These include the medical equipment used by MOs and nurses; and equipment required for routine communication and reporting such as phones and computers. It is essential that these equipment are not only available but are in a working (functional) condition as well.

As the grey outer line in **Figure 3.5** shows, most of the centres had most of the equipment as required by the guide lines, in one form or the other. However, the completeness and functionality of the equipment presented a different picture (the orange line inside). About 94% of the centres had a phone, of which almost all (87%) were functional. Almost all (356 of 357) centres had a computer, but only 65% were functional. On the other hand, the equipment required by the MOs (stethoscope, tuning fork, hammer, pulse oximeter etc.) was found to be incomplete in all but 13% of the centres. The reason behind this gap is the possible source of funding for the equipment. While computers are provided by the NACO as they are essential for reporting the centre level data in the CMIS, the medical equipment is provided by the parent health facility. As some of the equipment (such as pulse oximeter) may be perceived to be of not much importance at the ART centre or is perhaps available with the other departments within the same facility, this is reflected as a gap in the ART centre.

Figure 3.5: Availability and functionality of equipment at ART centres (percentage)



Overall, most (80%) of the facilities were found to be clean and well-maintained. However, the pharmacy did require some attention as in more than 40% of the centres, the space allotted to the pharmacy was either inadequate or there experienced excessive humidity,

Best Practice 3.1: Procuring and Maintaining infrastructure and equipment

The staff members at one of centres in Tamil Nadu have not allowed the lack of finances to affect the availability of adequate infrastructure and patient facilities at the centre. Some of their innovative practices include:

- Leveraging resources from the parent institution for signage and maintenance of the building.
- Staff contribution for purchasing a music system to play music in the waiting area, which has a soothing effect on the patients waiting for their turn to collect the drugs.
- Maintaining a garden around the ART centre for improving the ambience of the centre.
- Placing sign boards not just for the ART centre but for all other departments to guide the patient in case of referral to a specialist.
- Assigning a unique identification number for all equipment at the centre and ensuring its maintenance.
- Creating mini libraries that house all the relevant technical and programmatic guidelines and information along with the staff files.

which has the potential to reduce the shelf life and increase wastage of the ART drugs.

The 357 facilities attained a combined average score 5 for the attribute of infrastructure, out of a maximum possible score of 7. Over 40.6% (145) ART centres achieved Excellent/Good score 41.5% (148) centres received average scores whereas 17.9% (64) centres were graded as poor. Since, infrastructure was an attribute which significantly depends on the public health infrastructure and the commitment of health system to ART services in the state, the findings were further analysed for various categories of states under the NACP (based on HIV burden and maturity of epidemic). As can be seen in **Figure 3.6**, the 42.7% out of 246 ART centres in Category 1 states demonstrated the best performance in terms of Infrastructure, with 44% of the facilities reviewed scoring 6 or 7, and an average score of 5 across the 246 centres in Category 1 states.

Figure 3.6 (a): Distribution of Scores for Infrastructure across states

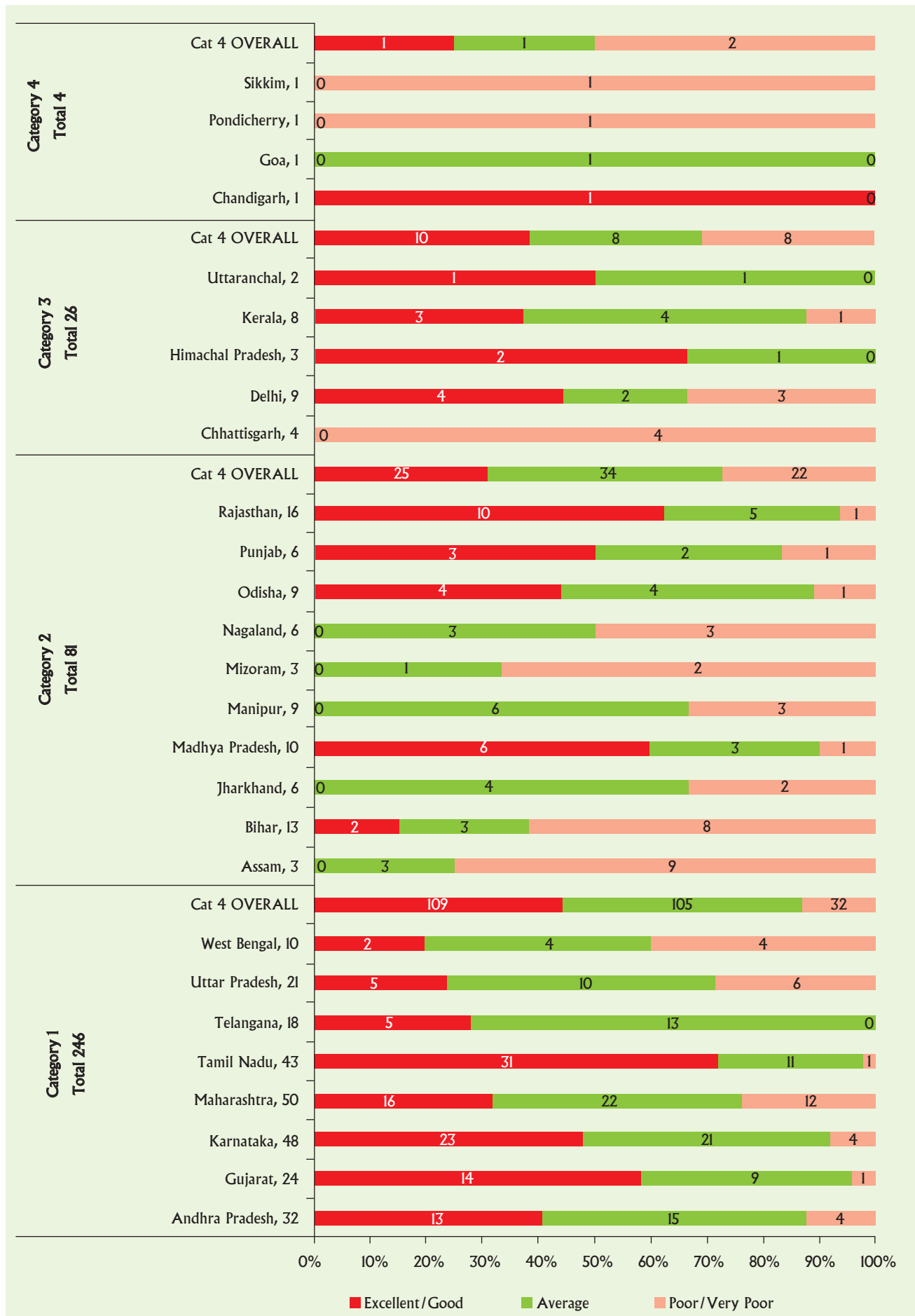
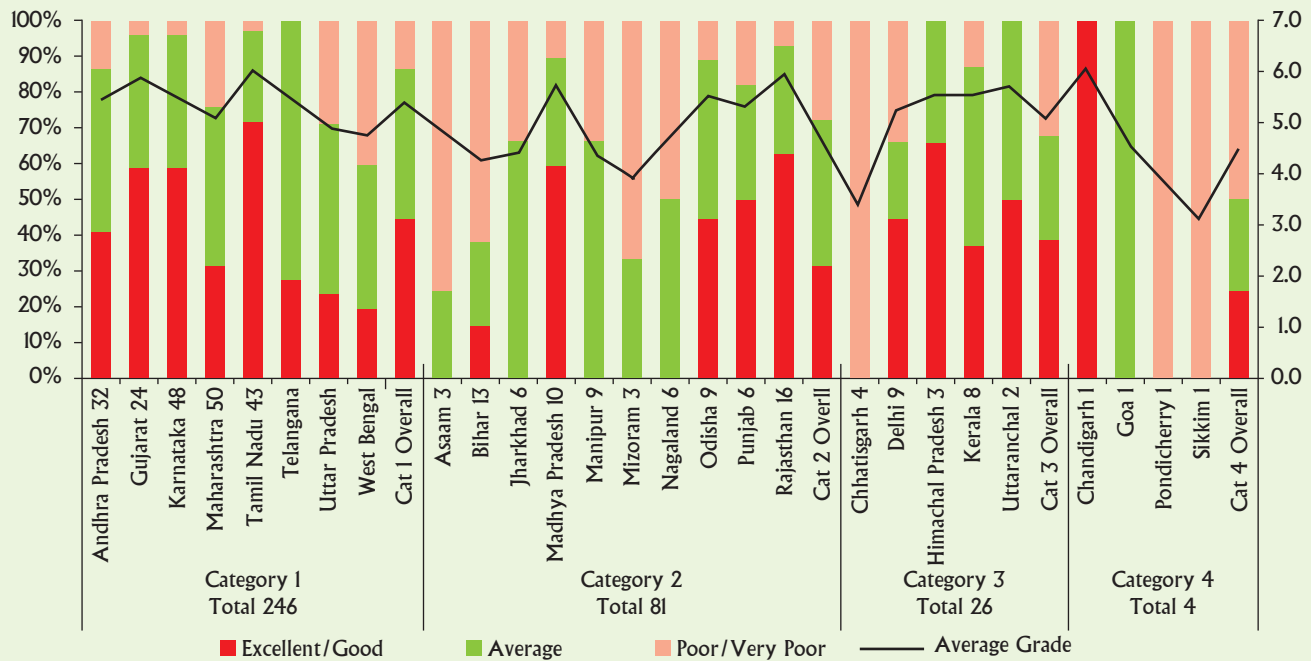


Figure 3.6 (b): Distribution of Scores for Infrastructure across states Average Grade



Summary - Infrastructure

Overall the ART centres were found to be performing satisfactory under this attribute. Overall, most (80%) of the facilities were found to be clean and well-maintained. However the pharmacies in 40% of the ART centres will need space, storage and shelving as the space allotted to the pharmacy was inadequate or there was excessive humidity, which can lead to reduced shelf life and increased wastage of the ART drugs. Separate rooms for the ART staff were available in majority of centres. However, availability of nursing stations and counselling rooms with audio-visual privacy were the key components of concern in almost half of the centres. As shown in Figure 3.10, some states had inadequate infrastructure across all the ART centres. The centres with insufficient infrastructure will require major infrastructural improvements to meet the guidelines to enhance quality of service delivery and make environment for the PLHIV more congenial.

- Patient flow, fast tracking of the identified patients and display of IEC are the key environmental measures for preventing TB and air-borne infections. Hence it is important for the ART centres to manage the patient flow and fast track patients and ensure display of IEC material pertaining to prevention of TB in the ART centres.
- Quality counselling for all PLHIV attending an ART centres is vital for ensuring the timely initiation of treatment and adherence to treatment, once

initiated on ART. Patient centred quality counselling can help in implementation of measures to prevent transmission, facilitate early recognition, diagnosis and management of OIs. HIV/AIDS is a disease fraught with stigma and therefore needs careful handling. Many beneficiaries, especially those belonging to HRGs are keen to discuss their health status and behaviours in a private setting. Thus, a demarcated space for counselling, which ensures audio visual privacy, is one of the most important infrastructural requirements for the ART program. ART centres that have not as yet ensured this facility for their patients must resolve this gap as a priority.

- ART centres are encouraged to display sign boards, flow charts and information about fast tracking (with complete details) in a prominent location within the centre so as to allow the patients visiting the centre have an easy and transparent access to the information regarding their entitlements from the centre.
- In addition to the physical space, a well-functioning ART centre also requires the presence of the equipment and supplies needed for managing the patients.

3.1.2 Attribute : Human Resources

Adequate numbers and appropriately skilled human resources are a basic requirement for the optimal functioning of any health facility. Human resources

required for effective functioning of ART centres are described under section 1.2. The ART centre is led by a Nodal Officer of the ART centre (Head, Department of Medicine or another faculty member nominated by the Head) who is responsible for the operations, as well as monitoring and mentoring of the ART centre. The Nodal Officer is supported by the ART team consisting of trained faculty from the departments of Medicine, Paediatrics, Microbiology, Obstetrics & Gynaecology, Biochemistry, Community Medicine, Surgery, Psychiatry, TB-Chest, Dermatology and Venereology. The NACO provides HR support to the ART centre which consists of the Senior Medical Officer (SMO), the Medical Officer (MO), Counsellors, Staff Nurse, Data Manager (DM), Lab Technician

(LT) and Care Coordinator. The Human Resources attribute encompasses (a) constitutions of ART team and its functioning, formation of steering committee and its functioning (recruitment and appraisal) (b) Staff positions and trainings (c) supervision, mentoring and monitoring by the Nodal officer. This attribute was assessed primarily through the review of HR records, and through interviews and interactions with the health care providers at ART centres.

Availability of ART staff

Based on the case load of the facility, the ART guidelines identify the staff requirement at ART centres. The guidelines further delineates the required training for each cadre (Table 3.1).

Table 3.1: Staff Requirement at ART centres (NACO guidelines)

Staff cadre	Case load (No. of PLHIV alive and on ART)						Training requirement
	< 500	500-1000	1000-2000	2000-3000	3000-4000	> 4000	
SMO	01						12 days
MO	01			02			12 days
Counsellor	01	02	03	04			12 days
Pharmacist	01						3 days
Data Manager	01		02				2 days
Staff Nurse	01			02	03		6 days
Institutional Nurse	01						6 days
Care Coordinator	01						-
Lab technician	Based on no. of CD4 tests per month (varies with type of equipment)						2 days

Based on the above guidelines, the reviewers, along with the data management team, estimated the total staff requirement across all 357 centres, and calculated the vacancy proportion for each cadre. As the mere presence of staff is not enough, and their skills are equally important, the assessment team further studied the status of the staff training. As seen in Figure 3.7 the recruitment status (as judged by the height of the column) for most positions like Counsellors, Pharmacists, Data Managers, Staff Nurses, Care Coordinators and Laboratory Technicians was close to or more than 90%. While about three-fourths (74%) of the Medical Officers were in position against the posts, almost half (47%) of the SMO positions were vacant. The position of the Institutional Nurse was the worst affected and had been filled to the extent of 17%. The gap is perhaps a reflection of the general scarcity of nurses within the public health system of India.

Figure 3.7: Staff availability at ART centres

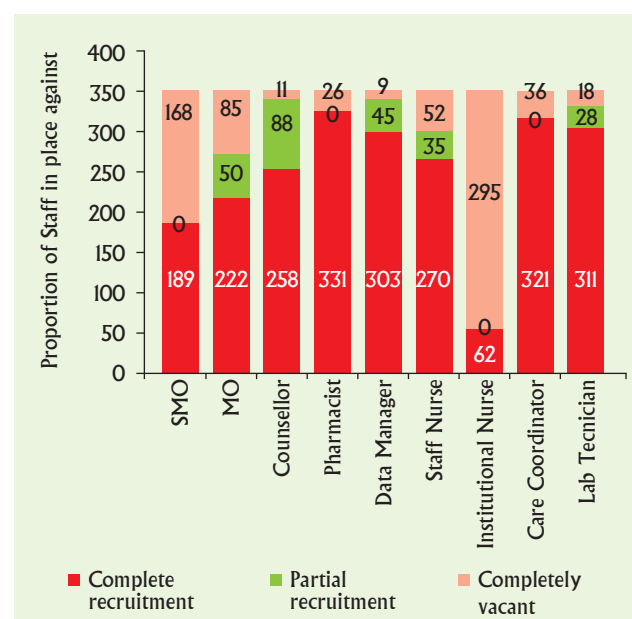
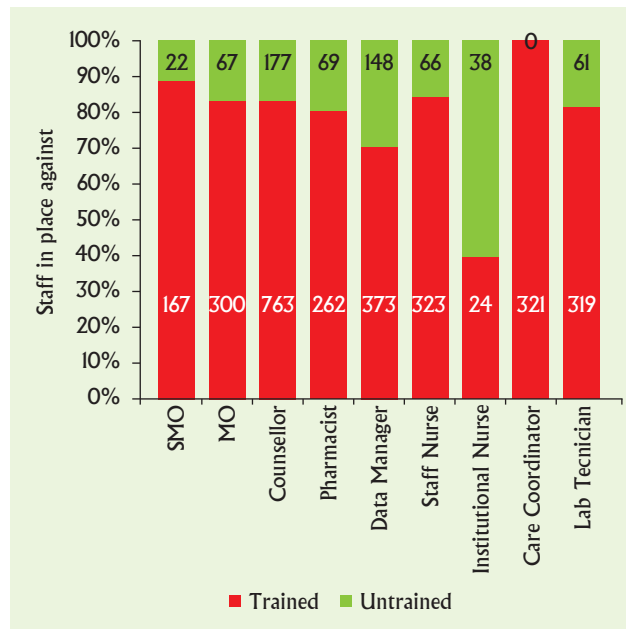


Figure 3.8: Staff Training situation at ART centre

It is important to map out the availability of staff available per centre along with the total available across the centres to better understand the adequacy of human resources. It is also important to study the spread of vacancies across centre to understand whether the vacancies are clustered in few centres or distributed uniformly across the centres.

For example, a comparison of **Figure 3.7 and 3.8** reflects that a significant proportion of centres did not have staff any positions filled for cadres of the SMO, MO and staff nurse. 47.3% of ART centres did not have the SMO, 23.8% of the centres lacked MOs and 14.5% of centres lacked staff nurses. The vacancies for these cadres were spread across all the ART centres in country, reflecting underlying more systemic issues in availability of staff from these cadres. The systemic issues include non-availability of people from these specialised cadres, issues pertaining to remuneration and higher attrition rates due to better opportunities. On the contrary, the positions of cadres such as the Counsellor, Data Manager and the Lab Technician, were filled in almost 96% of the ART centres. The reasons for non-recruitment were local or operational in nature and were limited to a few ART centres.

Trainings

To ensure optimal quality of care delivered across the facilities, it is important to have a team of trained human resources who are competent to manage the

PLHIV clinically and effectively and to address the stigma that surrounds the disease. Various cadre specific training programs have been developed for the staff members employed at the ART centres. Of the staff in position, almost 80% had received training according to the NACO guidelines. This excludes (from both the numerator and denominator for this calculation) all the Care Coordinators, as no training has been specified for them in the ART guidelines. **Figure 3.8** illustrates lack of variation among the cadres for the training status. For example, 88% of the SMOs were trained (the most trained cadre) and 72% of the Data Managers had received the recommended training. The outlier among the training parameter was the cadre of the Institutional Nurse. Only one third (38%) of the Institutional Nurses had received training. Therefore, the high vacancy rate for this position was compounded by the small proportion of the in-position cadre which had received any training. Thus, their current contribution towards management of the ART centres is potentially very limited.

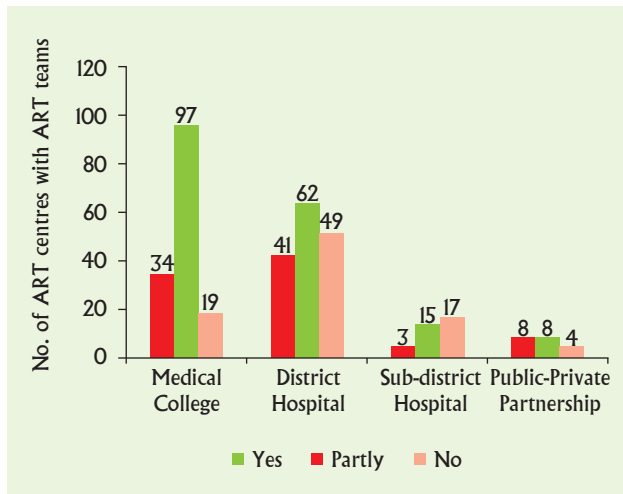
Institutional Involvement

The parent institutions where an ART centre is situated are required to constitute a multi-disciplinary (Internal Medicine, Paediatrics, Microbiology, Obstetrics & Gynaecology, Biochemistry, Community Medicine/ Public Health, Surgery, Psychiatry, TB/Pulmonology, Dermatology and Venereology) ART team led by the Head of the institution (such as the Dean/Principal of the medical college or the Medical Superintendent/CMO of the hospital). Regular meetings, once every two months, should be conducted under the chairpersonship of the head of institution to discuss the functioning of the ART centre and other relevant cross cutting issues.

The formation and functioning of the ART team was reviewed during the onsite assessment. Nearly 75% of the parent institutions had constituted an ART team. However, in most cases (68% of those constituted or 51% of all ART centres) it was not complete⁵ (**Figure 3.9**). Even where the ART teams were formed, only 15% met regularly (at least once in two months as mandated). An additional 21% of the teams had met once in six months, while the rest had not met even once in the six months prior to the assessment. It must be noted that the minutes of the meeting was used as the data source for assessing the regularity of the meetings. However, some institutions reported that while the meetings were being held the minutes were not being documented. Similarly in some of the institutions, these meetings

⁵ A complete team at a medical college consists of 10 members from various departments, whereas it consists of four members for a district hospital/sub-district hospital as the latter do not have the provision of all the specialities.

Figure 3.9: Formation of ART teams as per norms (distributed by type of parent facility)



were being conducted as apart of regular institutional meetings under the head of the institution.

In addition to the ART team, the guidelines also require the constitution of a Steering Committee (with the Head of the Institution as the Chairperson and the Nodal Officer of the ART centre as the Member Secretary). The Steering Committee is responsible for the recruitment and retention of staff (contractual appointments) at the ART centre. While nearly three fourth (73%) of the centres claimed to have constituted a Steering Committee, the relevant documentation

was found in only 61% of the centres. The Committee was performing the required tasks including annual performance appraisals of staff (as assessed by checking the HR files for the financial year prior to the review) in these centres.

Every ART centre is required to have a Nodal Officer, who may be the Head of the Department (HOD) of Internal Medicine, or any other faculty/specialist designated for this task by the HOD. The Nodal Officer is responsible for overseeing the entire operations of the ART centre. S/he is the convenor of the ART team meetings, and is the member secretary of the Steering Committee. In addition to these administrative roles, the Nodal Officer has another very important role – that of supervising and mentoring the ART centre’s staff members. To ensure adequate monitoring and mentoring, the Nodal Officer is required to visit the centre regularly and carry out interactions with the ART staff. S/he is also expected to be a vocal proponent of ART centre, raising issues including requirements of the centre at the appropriate forums.

Table 3.2 shows that almost three quarters of the centres (265 of 357) were receiving weekly visits from the Nodal Officer/Designated faculty member. In 299 centres, the Nodal Officer was reported to as spending at least 15 minutes during such visits. In 201 centres the Nodal Officer was reported as mentoring the ART

Table 3.2: Role of Nodal Officers - Institutional supervision and mentoring

Institutional supervision and mentoring	Number of centres		
	Weekly	Monthly	> One month
Nodal Officer or the designated faculty member visit the ART centre	265 (74.2%)	63	29
	>30 mins	15-30 mins	<15 mins
Time spent by the Nodal Officer at the centre	152	147	58
	Yes	Partly	No
Nodal Officer mentors the ART staff and advocates for ART service delivery within the institution	201	107	49

Best Practice 3.2: Human Resource management

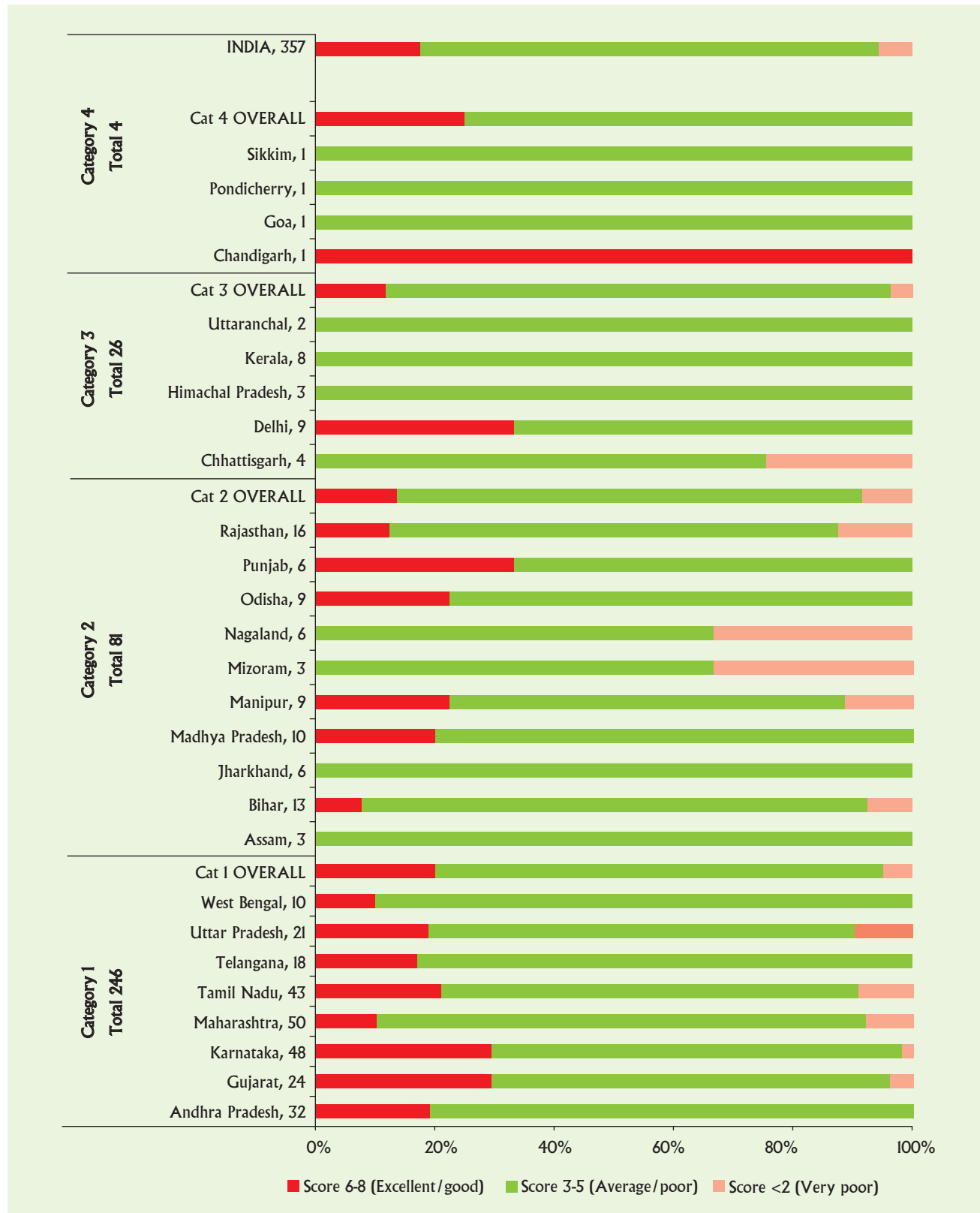
The position of the Medical Officer at an ART centre in Gujarat has been vacant since the last one year following the selection of the erstwhile MO for a regular government job in the same hospital. Despite repeated advertisement of the post and multiple interviews, the hospital has been unable to find a suitable candidate. However, to ensure the smooth functioning of the ART centre, the in-charge of the parent institution decided to allow the ART centre to use the services of the previous Medical Officer for about three hours every day. Thus, this trained and dedicated doctor serves the ART centre along with carrying out her other duties even though she is officially deputed and draws her salary from the main institute now. This is a reflection of innovative thinking by an ART centre (and the parent institution) to ensure effective management of the centre despite the resource crunch.

staff. Most of the Nodal Officers were perceived to be adequate advocates for ART service delivery within their institutes.

Majority (76%) of the centres across the country scored between 3 and 5 out of a maximum of 8 for

this parameter. Only 64 ART centres (18%) scored more than 75% marks (score of 6 and above) for HR. The 357 facilities attained an average combined score of 4 for the attribute of Human Resources out of a maximum possible score of 8. The state wise distribution of scores for this attribute is presented in **Figure 3.10**.

Figure 3.10: Distribution of Scores for Human Resource across states



Summary - Human Resources

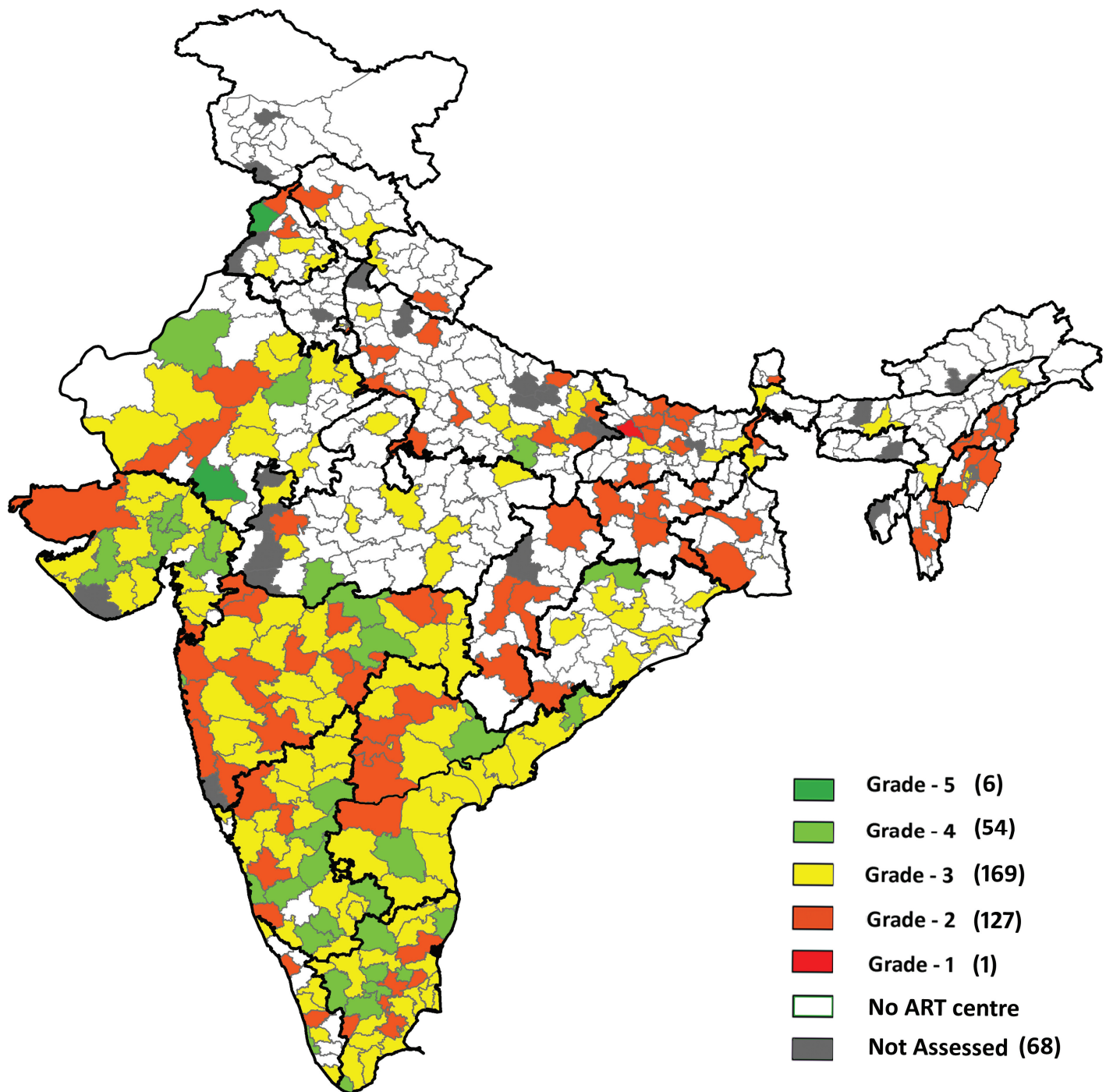
Over all 80% of the ART staff positions were filled. The recruitment status for most positions such as Counsellors, Pharmacists, Data Managers, Care Coordinators And Laboratory Technicians was close to or more than 90%. While about three-fourths (74%) of the Medical Officers were in position against the requirement, almost half (47%) of the SMO positions were vacant and nearly 18% on the nurse positions were vacant. Centre-wise analysis revealed that the SMO position was completely vacant in 169, MO positions in 85 Centres and staff nurse in 52 Centres. *Such centres are obviously unable to offer all the services that the ART centre is mandated to perform.* The vacancies for these cadres were spread across all the ART centres in country, reflecting a more systemic issue in availability of staff under these cadres: such as non-availability of people under these specialised cadres, remuneration issues, higher attrition rates due to better opportunities. The NACP will need to dwell on this issue further and design a way forward to tackle this problem. The possible solutions could be deputation of staff from the health system cadres and regularisation of these staff positions. In other states where positions were vacant due to operational or administrative reasons, it is recommended that SACS prioritise recruitment of needed personnel for such facilities.

- Of all the staff in position, almost 80% had received training according to the NACO guidelines. There was not much variation in the training status of various cadres. The proportion of people trained did not vary much between cadres

with the highest being 88% for SMOs and 72% for data managers. However, the programme should strive for training all the ART staff members as lack of knowledge, skills and competencies among the staff influences the quality of care. There were long delays in providing induction trainings to the newly recruited staff resulting in quality of service delivery as untrained staff members were interpreting the guidelines incorrectly. In addition, centres/states were not implementing refresher training in a fixed and regular manner to update staff on recent guidelines. States are therefore urged to plan and complete the training of all ART centre personnel who have been recruited till date. The plan should factor the need for ensuring timely training of newly recruited staff, regular refresher training sessions for the already trained staff.

- Institutional mechanisms such as involvement of Nodal Officer, involvement of medicine and other departments, the formation of an ART team, its regular meetings will lead to an appropriate oversight and mentoring for the centre which is important to ensure its smooth functioning according to guidelines. These mechanisms will also ensure institutional ownership. It is worth mentioning here that NACP-IV aims to accelerate the process of epidemic reversal and further strengthen the epidemic response in India through a cautious and well-defined integration process. Without this mechanism being strengthened, integration with health systems will not be possible.

Figure 3.11: Geographical Distribution of Centres by Grades obtained in the Operations Domain



3.2: Technical Domain

The Technical domain was categorised into five attributes. These were Counselling; Referral and Linkages; Infection control procedures; Attitude towards patients and Technical service delivery. The quality and effectiveness of counselling was assessed under the **counselling** attribute. The **Referrals and linkages attribute** aimed to understand the effectiveness of the linkage mechanisms between the ART and facilities such as ICTC/PPTCT, LAC/LAC plus and the facilities of the Revised National Tuberculosis Control Program (RNTCP). It further assessed the adherence to the processes for linkages delineated in the guidelines. The attribute on **Infection control** was designed to observe adherence to infection control practices and procedures by the ART centres. Attribute on **Attitude towards patients** aimed to capture instances of stigma and discrimination at the ART centres as experienced and reported by the PLHIV. **Technical Service Delivery** focussed on indicators pertaining to timely initiation of ART, follow-up CD4 count and retention in care.

3.2.1 Attribute : Counselling

ART services have a strong component of counselling which aims to improve the quality care and retention of PLHIV in care. PLHIV face many barriers to treatment as it lasts a life time. Counsellors at the ART centres, are expected to provide psychosocial support and counselling to all the PLHIV about ART eligibility, CD4 testing, regular follow up, positive living, positive prevention, nutrition & hygiene. Non-adherence to treatment can lead to inadequate HIV suppression leading to rebound replication and multiplication of resistant strains. Counsellors are also responsible for ensuring ART preparedness among the PLHIV eligible for ART by informing them about the importance to treatment adherence and side effects. Those suffering with tuberculosis or other co-infections require additional counselling and treatment support. Counselling also helps the patient set personal goals, develop positive beliefs and perceptions, and increase self-efficacy in adhering to ART.

Counselling was reviewed from two different angles under this assessment. The first angle was the “**quality**” of counselling which was assessed by asking the Counsellors technical questions related to HIV/AIDS counselling and scoring their knowledge on this issue as well as the use of IEC material during counselling. The second angle was the “**effectiveness**” of counselling, wherein beneficiaries (5 from each centre) were interviewed to seek their impressions about the quality of counselling and questions asked to ascertain their knowledge on certain key issues that are an integral part of HIV/AIDS counselling.

A maximum of two Counsellors were interviewed from each centre. In case there were more than two counsellors at the centre, then the junior most and senior most were chosen from them, preferably one male and one female Counsellor. Of the 940 Counsellors available in the 357 centres assessed, almost two thirds (618) were interviewed as part of this assessment. Of the 618 Counsellors, 281 (45%) were women.

A designated space with adequate audio-visual privacy is important to ensure effective counselling. As seen earlier in **Figure 3.3**, less than half (173 of 357) the ART centres had appropriate space for counselling. However, only one third of the facilities had IEC material on all the counselling topics (**Figure 3.12**). Most centres lacked material for one or more topics.

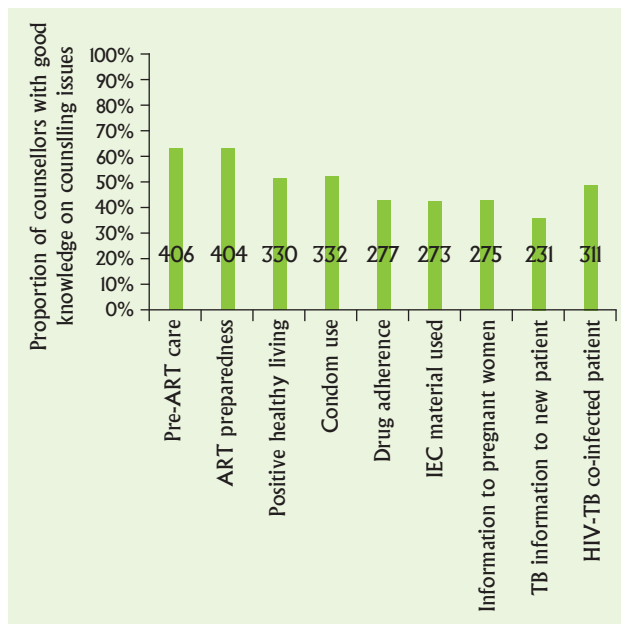
As can be seen from **Figure 3.12**, the Counsellors were most knowledgeable about the topics pertaining to “Pre-ART” care, and counselling for ART preparedness and positive living. About two thirds (66%) of the Counsellors could enumerate all three key points⁶ to be borne in mind while counselling the “Pre-ART” PLHIV. A similar proportion of Counsellors could list all four points⁷ required to be included while counselling for ART preparedness. However, the Counsellors were less informed about counselling a newly registered PLHIV about TB, and only 37% of those interviewed could mention the three key points⁸ to be borne in mind during TB counselling.

⁶ The key points for counselling on pre-ART care are: i) scheduling of visits, ii) repeat CD4 count every 6 months, and iii) follow-up for OI management.

⁷ The key points for counselling for ART preparedness are: i) treatment is life long, ii) treatment description, iii) confirming willingness for treatment, iv) side-effects of ART.

⁸ The three key points for counselling newly registered PLHIV on TB are: i) screening for symptoms, ii) availability of TB referral services, and iii) use of ten point screening tool.

Figure 3.12: Quality of counselling provided by counsellors (N= 618)



The effectiveness of counselling was captured by assessing patient's knowledge and understanding of the key counselling areas and feedback about the ART services. Beneficiaries were interviewed to get an overview of their understanding of the counselling topics. As mentioned in **Section 2.3**, a maximum of five beneficiaries were sampled from each centre. The assessors were required to (as per the guidance note) select two PLHIV who have recently (less than 6 months) initiated ART, and the

three with a longer (6 months to 2 years) duration of treatment. A total of 1785 beneficiaries were interviewed as part of this assessment.

Table 3.3 shows the proportion of beneficiaries who reported receiving counselling on various aspects of HIV (prevention and management) and ART during the interview. More than three-fourths of PLHIV revealed that they had been counselled before the initiation of ART, and were informed that this is a lifelong treatment. They had been informed about the importance of adherence. Treatment details such as the drugs' side-effects that they could expect to experience, had been shared with them. Almost all the beneficiaries (96%) knew about the timing of their next (follow-up) visit, the knowledge of which is important to ensure regular treatment. Given the stigma and discrimination that surrounds the disease and has a significant negative psychological impact on the patients, it was heartening to learn that nearly 90% of the beneficiaries said that they received psychological support from the Counsellors. Of the 217 positive pregnant or lactating women about 72.8% were given the needed information about PPTCT during ANC, delivery, PNC, early infant diagnosis, or breast feeding practices to prevent transmission to the child.

One of the key gaps observed in counselling was the use of counselling tools, be it the IEC material (44%) or usage of the penis model to demonstrate

Table 3.3: Effectiveness of/Beneficiary perspective on counselling on HIV and ART related issues

S.No	Aspects of HIV and ART counselling	% of beneficiaries who received counselling
		N = 1785
1	Treatment preparedness	79.5
2	ART side effects	68.5
3	Drug adherence	86.1
4	Pill counting done (by counsellor at each visit)	62.8
5	Follow up visits	95.9
6	counselled before giving CD4 test report	78.0
7	Correct and consistent use of condoms (N=1190)	63.3
8	Condom use demonstrated (on penis model)	47.9
9	Testing of spouse/partner/children (N=1427)	87.6
10	Nutrition	85.2
11	General hygiene	82.2
12	Cough hygiene	82.2
13	Linkages with PPTCT (ANC, PNC, EID) (N=217)	72.8
14	Breast feeding/infant nutrition (N=217)	63.2
15	Counsellor used IEC material	42.4
16	Social welfare schemes	25.7
17	Psychological support provided	89.4

the correct usage of condoms (48%). This is probably influenced by the fact that only 34% of the ART centres had the complete complement of IEC materials (**Figure 3.12**). As per guidelines, PLHIV are referred to Care & Support Centres (CSC) where they are linked to Social Welfare Schemes. However, only one fourth of the PLHIV revealed that they were given information about social welfare schemes.

It was interesting to note that knowledge levels of the patients, as assessed in “effectiveness”, was more than the knowledge levels of the Counsellors. It is likely that the patients have acquired knowledge from different sources and over multiple visits to the ART centre.

The quality and effectiveness of counselling was cross-referenced with the availability of adequate

infrastructure for counselling. As seen earlier in **Figure 3.3**, less than half (173 of 357) of the ART centres had appropriate space for counselling. Furthermore, only one third of the facilities had the required IEC material for providing effective counselling. Nearly 27% of the centres did not have all the Counsellors in position as required by the guidelines and nearly 19% of the Counsellors had not been trained.

A maximum weighted score of 10 was allocated to the Counselling attribute. The combined average score for the 357 centres was 7 out of 10. The state wise distribution of scores for this attribute is presented in **Figure 3.13**. About 46% of the ART centres scored 8 or more in this category, and were rated “Good” or “Excellent” and 29% as “Average”. However, 25% of the ART centres demonstrated poor performance under this parameter.

Best Practice 3.3: Social Welfare Schemes

Many states have initiated welfare schemes for PLHIV. These include monthly “pension schemes” the amounts varying from state to state. For example, Tamil Nadu, Andhra Pradesh and Telangana provide Rs. 1000 per month per patient, while Gujarat provides Rs. 500 and Orissa Rs. 300. Rajasthan provides financial assistance to Children living with HIV (CLHIV).

In addition, states like Gujarat, Karnataka, Orissa, Rajasthan, Andhra Pradesh and Telangana also provide either travel allowance or free bus pass facility for the PLHIV and CLHIV to facilitate their attendance at the ART centres. Such monetary and non-monetary benefits ease the out-of-pocket expenditure for the PLHIV and CLHIV and increases access and adherence to CST/ART services.

The PLHIV accessing care from, one of the interior districts of Gujarat, have to wait an entire day to get their CD4 tests done and collect the report. This poses a challenge for the PLHIV living far from the centre. To overcome this barrier this centre has partnered with a local NGO called “Annapurna”. The NGO provides lunch to patients at a subsidised rate of Rs. 2 per person while they wait at the centre for their reports. This centre also provides monetary assistance of Rs.500 per month to PLHIV from marginalised communities (SC, ST and OBC) as a nutritional supplementation.

In a teaching hospital in Vellore, which is run by faith based charities, the funds collected from the benefactors are used to support the nutritional and educational needs of children infected and affected by HIV.

Centres in Gujarat have linked the orphaned CLHIV/HIV affected children with government orphanages (for boys and girls, respectively).

Figure 3.13: Distribution of scores for “counselling” across states



Summary - Counselling

In a nutshell, the ART centres are providing quality counselling. Counsellors were well informed about counselling topics pertaining to “Pre-ART”, ART preparedness, Positive healthy living, ART care and treatment adherence. The quality and effectiveness of counselling was reflected in the knowledge and responses of the beneficiaries. Majority of the beneficiaries reported being satisfied with the counselling services. The beneficiary interviews indicate that counselling has laid a good foundation to facilitate the retention in care and adherence to treatment. It has helped in rapport building with the ART centres. The beneficiary feedback on this attribute was overall very positive.

However, some components of counselling at ART centres need strengthening as some centres did not demonstrate optimal performance under the counselling attribute. This could have been influenced by the vacant positions in high load centres and the gaps in training for some of the Counsellors.

Counselling can be improved further and the patient experience enhanced by focusing on a few key areas:

- Ensure audio visual privacy in spaces dedicated for counselling.
- Complete the initial mandatory induction training of all the Counsellors. For those who have already been trained, a refresher training should be organised. NACO may find the results of this section helpful in deciding the areas to focus on during the refresher training - such as PPTCT, counselling for TB (prevention and management), social welfare schemes relevant to the HIV/AIDS arena among others – and devise the training package accordingly.
- SACS should ensure the availability of IEC material in local language across the centres. The visual impact of IEC material leads to better retention of information among the patients.

3.2.2 Attribute : Referrals and Linkages

An ART centre is just one of the facilities in a chain of facilities for providing care, support and treatment for PLHIV. ART centres thus need to be appropriately linked to other centres/facilities to ensure continuum of care and retention of PLHIV. For example, PLHIV detected at the ICTCs or PPTCT centres are referred to an ART centre for care and treatment. Similarly, in order to facilitate closer geographical access to the services, ART centre may refer PLHIV to LACs and

LAC Plus centres for receipt of ART. As TB is the most common OI, there is a need for timely diagnosis and its appropriate management under the RNTCP. The NACP has laid down structured mechanisms for facilitating coordination and linkages between ART centres and other facilities. The **Referrals and Linkages** attribute assessed the adherence to these mechanisms and their effectiveness. This assessment focussed on linkages of ART centres with three key facilities/structures: ICTC/ PPTCT, RNTCP and LAC/LAC Plus.

The reviewers conducted discussions with the ART centre staff and reviewed the relevant registers and records to understand the process and status of cross referral feedback.

i. Linkages with ICTC

In order to maintain continuity of services and ensure that all clients identified as positive for HIV are registered at the ART centre. It is essential to create effective linkages between an ICTC and the ART centre. This minimises loss between detection and treatment services. A “triplicate referral form” (pink slip) is filled in the ICTC for ensuring seamless referral. One of the triplicate copies is retained at the ICTC and the other two are given to the HIV positive client during the post-test counselling. The patient gives one of these copies to the ART centre he or she is referred to. The ART centre in turn provides feedback to the ICTC/PPTCT through email/post/patient line list during the monthly meeting.

The assessors reviewed the ART records for feedback to ICTC. About 43% of the centres were providing regular feedback to ICTC for more than 80% of the patients and nearly 37% of the centres were providing feedback for 50 to 79% of the patients. However, about 20% of the centres had shared feedback for less than 50% of the patients (**Figure 3.14**). Observations revealed that different mechanisms of coordination existed between ART & ICTCs. These include electronic sharing of reports and district level coordination meetings under DAPCU for information exchange and reconciliation. Analysis of program data revealed that as many as 82% of PLHIV are linked to ART centres after detection at ICTC.

ii. Linkages with RNTCP

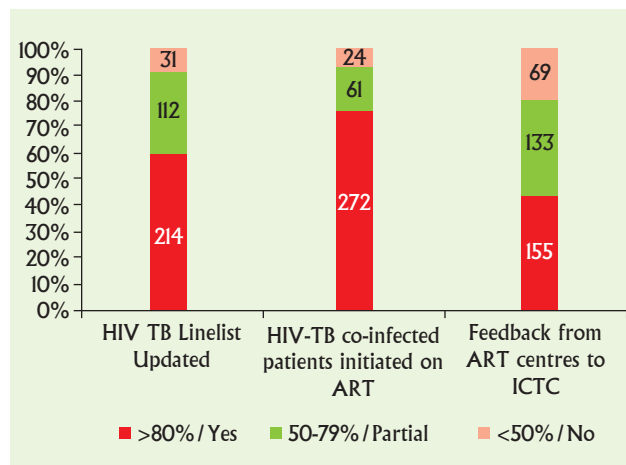
The guidelines require all PLHIV to be screened for symptoms of TB at every visit, and those found to be symptomatic referred to the nearest Designated Microscopic Centre (DMC) for diagnosis. If the patient

is found to have TB, then he/she must be initiated on anti-tubercular treatment (DOTS) by the RNTCP. Patient must be referred back to the ART centre, so that their ART regimen can either be initiated given the diagnosis of co-infection, or the ARV drugs are substituted if they are already on ART. The ART centre is required to maintain a line-list of all presumptive TB co-infected PLHIV and share it with RNTCP for feedback on diagnosis and treatment. All those found co-infected are registered in the HIV-TB register for follow up.

In order to understand linkages with RNTCP, the assessors conducted an interview with the ART Staff Nurse and reviewed the HIV-TB line list and the HIV-TB Register. The line list for three months, preceding the date of assessment, was reviewed for completeness. The entries for one year were reviewed in the TB register for assessing initiation of ART treatment.

As can be seen in **Figure 3.14**, HIV-TB line list and register was maintained and followed-up in 91.3% (326) of the centres, of which 60% centres (214) had a completely updated list. The states of Tamil Nadu and Gujarat were found to have the maximum number of centres with updated lists. In all, more than 90% of HIV TB co-infected patients registered in year 2013 were initiated on ART. More than three fourths of the centres had initiated most⁹ of their HIV-TB co-infected patients on ART.

Figure 14: Linkages of ART centre with other HIV related services



iii. Linkage with LAC and LAC Plus

In order to expand the geographical access to ART and decentralize services to the beneficiaries, NACO provides services through “Link ART centre” (LAC)

Best Practice 3.4: Linkages with RNTCP and ICTC

When the one of the ART centre at Gujarat refers a cough symptomatic patient for sputum microscopy to the RNTCP centre, the staff Nurse/ART staff provides the patient a sputum cup for collecting sputum sample and instructions on how to collect the sputum. This enables the patient to carry the first sample to the RNTCP sputum microscopy centre when s/he visits it for the first time. The other sample is then given on the spot. This reduces the number of visits to the microscopy centre to only two – one for providing the sample, and another for collecting the report.

One of the Nodal Officers of the ART centre in Gujarat conducts co-ordination meetings with officials managing the RNTCP programme and the ICTC staff twice a month - on the 7th & 23rd.

at district and sub-district hospitals and Community Health Centres (CHCs), which are located closer to the patients’ residence. The LACs are linked to a Nodal ART centre which is within an accessible distance. LACs are responsible for providing drugs to the beneficiary at their facility, monitoring adherence to ART, side effects and OIs, and managing the latter wherever possible. The LAC Plus centres are an ‘upgraded’ version of LAC that also provide some “Pre-ART” services such as six-monthly collection of blood samples for CD4 count testing. LAC/LAC plus do not function as independent units and are functionally attached to an ART centre through referral and reporting. ART centres are supposed to provide supportive supervision to the LAC/LAC plus. For a patient to be linked out to an LAC, it is important that s/he be on treatment for at least 6 months, should have a good adherence rate (>95%), and should not have any OIs.

Of the 357 ART centres, 251 had one or more LAC/LAC Plus centres attached to them (**Table 3.4**). In these centres, most (75%) of the in-charge SMOs/MOs were aware of the pre-conditions a PLHIV must satisfy before linking them out. However, only two- third of ART centres were conducting coordination meetings with the LAC. Also, the record keeping for linked out patients was relatively poor at the Nodal ART centres with

⁹ “Most” here refers to >80% of the co-infected patients registered in 2013 who were initiated/receiving ART.

only 38% of the centres maintaining separate records (4B/4C and monthly reports) for such patients.

Table 3.4: Linkage of ART centres with LAC and LAC Plus

Particulars	Number of Centres (%) N = 251		
	Yes	Partly	No
SMO/MO aware of criteria for linking out patients to LAC/LAC Plus	188 (74.9)	44 (17.5)	19 (7.6)
ART centres conducts regular (monthly) coordination meetings with LAC/LAC Plus	111 (44.2)	53 (21.1)	87 (34.7)
Linked-out forms maintained separately for LAC/LAC Plus at ART centre	96 (38.2)	55 (21.9)	100 (39.8)

The average score attained by the 357 centres under “Linkages” was 3, out of a maximum score of 4.

Summary - Linkages

- Most of the ART centres were maintaining effective linkages with the various facilities identified under this assesment.
- Though more than 80% of the HIV–TB co-infected PLHIV were receiving ART, there is further scope for improvement in terms of coordination, information sharing and facilitating single window services to reduce loss during cross–referrals between both programmes.
- The concept of LAC and LAC plus aims at decentralising ART services for the patient and integrating them with larger health systems especially at the peripheral levels. LACs have a key role to play in the future of HIV care and management. There is need for better coordination, supportive supervision and mentoring by the nodal ART centres. Regular coordination meetings with the LACs will allow the SMOs/MOs to be aware of the situation in the LAC, especially the challenges faced by them. This will also be an opportunity to review the records and registers, ensure that they

are being maintained as per guidelines, and/or suggest corrective actions wherever required.

- HIV should also be one of the components of monthly review meetings taken by District Magistrate in which other health programmes like RNTCP and RCH are discussed.

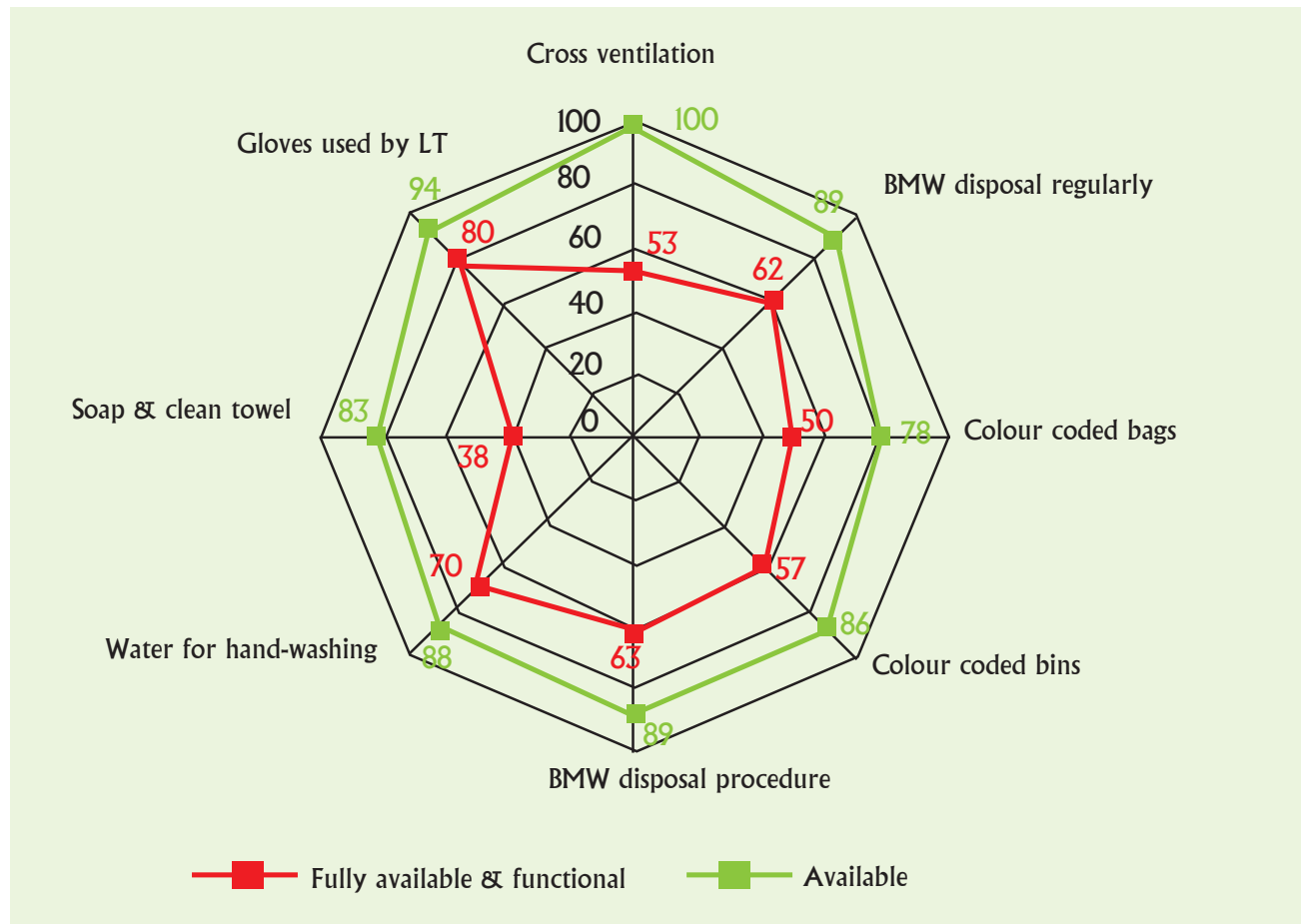
3.2.3 Attribute : Infection Control

Patients accessing ART services have relatively lower immunity status compared to the other patients visiting the outpatient departments and are thus more susceptible to infections. Therefore adherence to standard infection control practices becomes even more important for the ART centres. ART centre is required to ensure waste segregation and disposal; implement airborne infection control practices to prevent TB transmission; and adhere to standard universal workplace precautions. The attribute pertaining to **Infection Control** was designed to observe and report adherence of the ART centre to infection control practices and procedures for as required by the ART operational guidelines.

All health facilities (District level and Medical Colleges) are required to have a Hospital Infection Control Committee in place, which provides oversight to infection control practices across facility and not just the ART centre. NACO guidelines require that the Nodal Officer of the ART centres be a part of this Committee. The parent institutions of 233 (65%) ART centres had constituted such a committee. This perhaps is a reflection of the overall functioning of the health systems, and is not specific to the management of the ART centre. Of the facilities where the committee had been established, Nodal Officer was a member of the committee in only 141 centres (61% of the 233). Among five states of India (Chandigarh, Goa, Jharkhand, Pondicherry and Sikkim), the Nodal Officer was not a committee member in any of the facilities, indicating a possible lack of clarity on this issue at the state level.

The infection control practices reviewed were followed in some measure by at least 80% of the centres. However, as shown in **Figure 3.15**, there were significant gaps when these practices were compared against the standard to understand the magnitude of adherence. For example, while 83% of the centres had either a clean soap or towel and only 38% had both. Almost all the centres had disposable gloves, but they were being used by the LT on a regular basis in only 80% of the centres.

Figure 3.15: Infection control practices followed in ART centres



The average score for infection control was 2, out of a maximum of 3. There was a state-wise variation in overall infection control practices. More than half of the centres in 11 states were graded as “excellent” for infection control.

Best Practice 3.5: Infection Prevention

In one of the ART centre (and the attached in-patient facility) in Andhra Pradesh the hospital has state of the art infection control practices. Not only do they have the required equipment in place for waste disposal (coloured dustbins and bags etc.) and are following all the protocols for biomedical waste management and their efforts towards patient education on infection prevention including prevention of transmission is also noteworthy. Relevant IEC material was displayed prominently at the centre. Along with this, the Counsellor too provides information on simple practices that the PLHIV could adopt to prevent infections. PLHIV who were co-infected with TB are provided with masks at the centre, thus underlying the importance of such protective gear.

Summary - Infection Control

Infection control constitute standard practices that are essential to ensure quality of health services in general and are not just specific to HIV/AIDS programme or ART service provision. Though all the infection control practices reviewed were followed in some measure by at least 80% of the centres, these practices were not adhered to in totality. Systemic issues such as non-availability of infection control committees and requisite infrastructure such as running water, lack of training of ART staff on infection control practices constitute some of the barriers in achieving optimal infection control. Considering the crowded settings of the ART centres and the vulnerability of the PLHIV and health care staff to TB infection, there should be ample focus to implement administrative, environmental and Personal Protection Equipment (PPE) measures of airborne infection control.

The health department in the states should ensure the constitution of Infection Control Committees in all the facilities, especially in tertiary care facilities such as medical colleges and district hospitals where most of the ART centres are located. The SACS in the five identified states where the Nodal Officer of the ART centre is not

a member of the Hospital Infection Control Committee in any facility, are encouraged to send a clarification note/order to all the parent facilities directing the inclusion of the Nodal Officer as a committee member.

3.2.4 Attribute : Attitude Towards Patients

PLHIV face many psychosocial and economic problems due to their HIV sero-positive status. HIV/AIDS is a disease arena fraught with stigma and discrimination. There is anecdotal evidence that even the health facilities are not untouched by this practice. Thus the attitude of the personnel working in ART centres towards the patients can determine the willingness of PLHIV to avail services at the centre, and influences the success of the CST programme. A grievance redressal mechanism is a 'non-negotiable' element of care to facilitate the resolution of any such discriminatory experience. ART is a lifelong treatment to which optimum adherence is necessary. Under the programme, ART has been made available free of cost by the government to ensure that economical barriers do not impede the fight against HIV control. The assessment reviewed elements of discrimination and availability of free drugs. These were the only two elements with a possibility of negative scoring. Centres received negative scoring if the grievance redressal mechanism was not in place, if instances of stigma and discrimination were reported or if the PLHIV were charged for ART drugs.

In order to assess the attitude of the ART staff towards the patients, the reviewers observed the availability of a complaint box, the presence of grievance redressal committee, the mechanism of redressal and types of complaints received. Information was further sought from the beneficiaries to understand their experience with the services, discrimination, stigma or referrals to purchase ART drugs from external pharmacies.

A functional grievance redressal mechanism is a platform for the patients to make their voices heard if they face any issues at the health facility. While about 88% of the facilities had a complaint box installed, these were placed in a location that was visible and easily accessible to the patients in only 61% (219 centres) of the centres. Once a patient drops a complaint in the box, there needs to be a system to record the complaint in a register and ensure appropriate actions to address it. However, such a register was maintained in only 47% of the facilities, and only 27% (97 centres) had any complaints logged in the register. It was heartening to observe that there were only nine instances of stigma

and discrimination recorded in the complaint register in the ART centres assessed, and six of them had been addressed by the institution.

The interviews with the beneficiaries revealed that they were satisfied with the staff and services provided and there were no instances of stigma and discrimination experienced at the ART centres. This included beneficiaries from ART centres where complaint box was not available.

Interviews did not reveal instances where PLHIV were asked to pay for ARV drugs or were prescribed ARVs from outside the ART centres. However, interviews with beneficiaries revealed that user fees were charged for routine tests in albeit 10% of the centres. This is state specific as some states have made all routine investigations free for PLHIV. However, in some states only specific investigations are free of charge. Beneficiaries from 26% (92) of the centres reported that OI drugs had to be bought from external pharmacies at times.

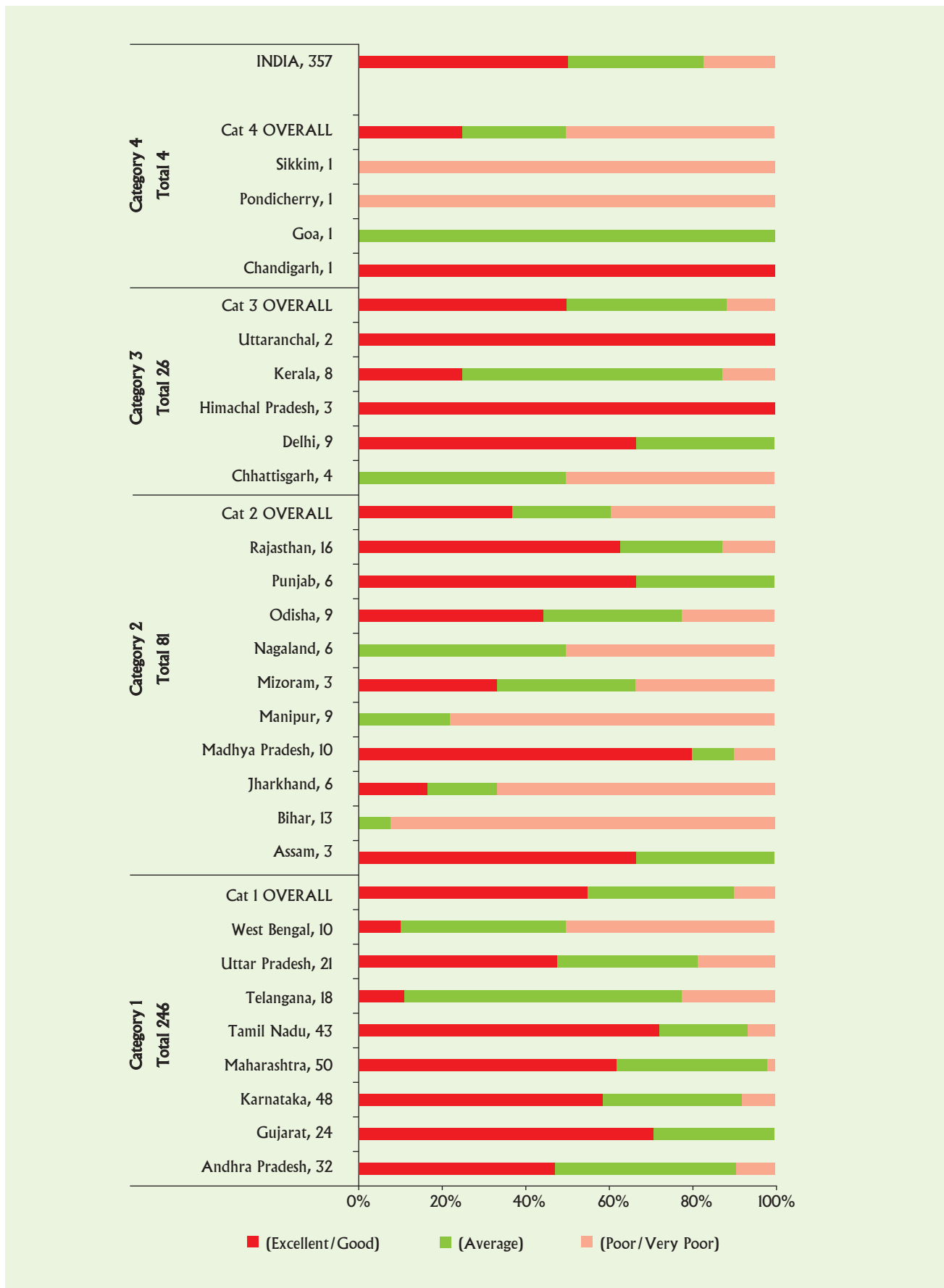
While the maximum possible score was 2, the minimum score for this attribute could go up to minus 3 due to negative scoring pattern. In some (9%) centres, the scoring came down due to negative scores resulting from non-availability of complaint box, redressal register and OI drugs. Despite this, average score for this domain was 1 and most of the of ART centres (68%) scored between (1- 2) which is quiet heartening.

Summary - Attitude towards Patients

In a nutshell, the findings and the beneficiary interviews indicate that ART staff have a positive attitude towards patients. None of the intensive interviews with the PLHIV (which included all categories of patients - FSW, MSM, IDUs, positive pregnant women, HIV/TB co-infected and general men and women), revealed any instances of stigma and discrimination by the ART staff.

However, given the stigma and discrimination that surrounds PLHIV, a strong grievance redressal mechanism is essential to ensure patients have the platform to share the issues that they face at the health centres. This can be a powerful tool to improve services at the facility. Therefore, all ART centres should implement a robust and transparent redressal mechanism. States may be required to follow up with the ART centres and also resolve any such cases in the State Grievance Redressal committee meetings.

Figure 3.16: Distribution of scores for “Linkages, Infection Control and Attitude” across states



Many states have made routine investigations available free of cost to the PLHIV and other states could emulate this practice. As most of the drugs used for treatment of opportunistic infections are routinely available with health systems, SACS should coordinate with the broader health systems to ensure adequate availability of OI drugs as these are not provided by the NACP.

3.2.5 Attribute : Technical Service Delivery

The primary task of an ART centre is to provide Care, Support and Treatment services to PLHIV. As far as programmatic and clinical functions of ART centres are considered, the core tasks include assessing the immunological/clinical status of newly registered PLHIV by testing for CD4 count; timely initiation of ART as per the eligibility criteria prescribed in national guidelines; management of Opportunistic infections; and regular (6-monthly) follow-up of CD4 counts of patients. In addition, baseline investigations that are required to assess the general health condition of the patients must also be conducted. All the patients must be screened for OI particularly TB during each visit. This attribute focussed on the quality of clinical care and retention of PLHIV in care as this is the mainstay of ART service delivery. Since this forms the focus of the work done at an ART centre, this attribute carried the maximum weightage among all attributes.

In order to assess parameters under this attribute, a desk review of the monthly reports and Master Line List (MLL) was done to understand retention in care at each of the ART centres. The assessors carried out an in-depth review of records & registers and interviewed health care providers and beneficiaries to gather

information about technical service delivery aspects. During onsite visits, 34,600 patient treatment cards (white cards) (minimum of 50 to a maximum of 250 cards per centre, depending on the case load at the centre) and 15 records & registers each were reviewed across 357 centres. The cards were randomly selected from between the years 2005 to 2013. The findings were captured in the excel-based and standardised “Tool B” to maintain objectivity and ensure analysis of the centre’s performance.

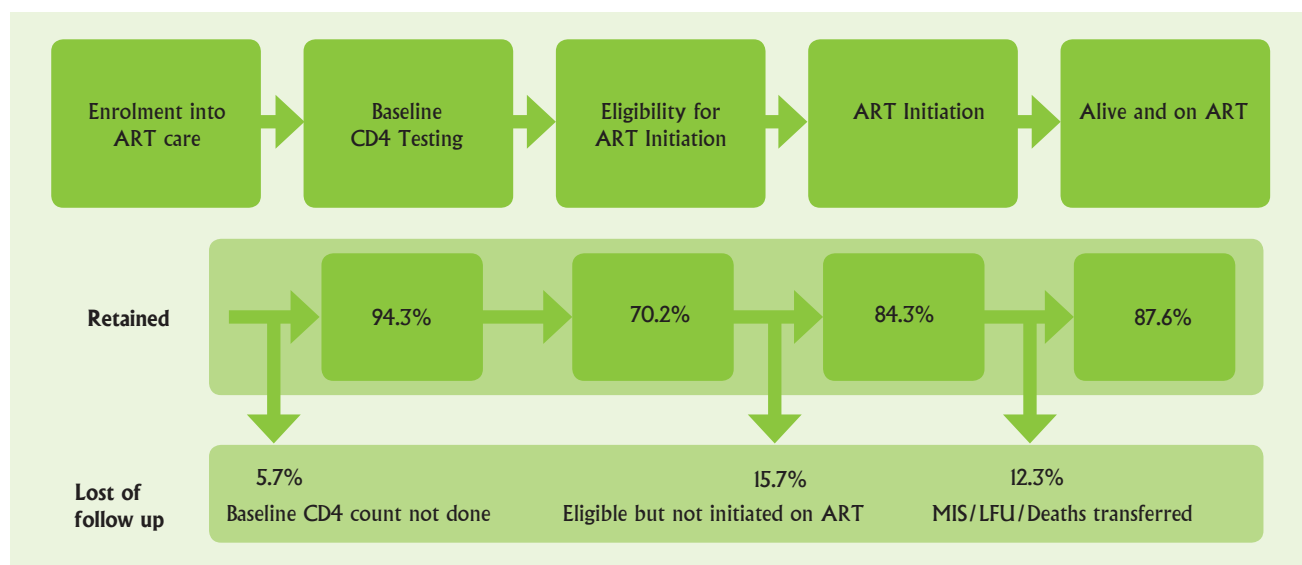
As discussed in Chapter-2 the Nodal Officer, SMO/ MO, Staff Nurse and Counsellors were also interviewed. The levels of technical knowledge and understanding of technical guidance among the medical professional at the ART centre has a direct bearing on patient care. Therefore, in addition to questions which captured the quality of technical services, the SMOs/MOs were also asked questions to assess their knowledge on treatment regimes and side effects of drugs among others.

I. Desk review findings

i. Retention of PLHIV in care

Retention of PLHIV in care is one of the primary foci of the programme. It is vital to minimise loss of PLHIV at every stage - from enrolment in services to follow-up in ART care. To understand the retention cascade in each of the ART centre, a desk analysis was carried out using data for patients registered during the financial year 2014-15, which is reported by all the centres on a monthly basis. Though this was not a strict cohort analysis, it gave a cross sectional snapshot of retention at the end of financial year. The retention at different stages is described in **Figure 3.17** below.

Figure 3.17: The Retention cascade of PLHIV



Source: CMIS data for patients registered from April 2014 to March 2015

The analysis revealed that almost 94% of those enrolled undergo baseline CD4 test to ascertain eligibility for ART. Of those eligible for ART, 84.3% are initiated on ART. Of those initiated on ART, 87.6% are retained in ART care at the end of financial year. The analysis reflected that as many as 15.7% of eligible PLHIV are not initiated on ART.

This data had limitations as only the number retained at each stage was reported but disaggregated data on the status (alive on ART/died/LFU/opted out/transferred out to other ART centres) of those not retained was not reported in the monthly reports of ART centres. The assessors were advised to review with the ART centres the reasons for loss at each step, during the onsite assessment. Detailed review of the retention cascade during onsite assessment revealed that along with actual loss to follow ups, loss of linkage data resulted in a significant proportion of those died and transferred out at each stage being lost in the reporting.

For example, the onsite review of retention cascade data for ART centres in Gujarat revealed that from among the 19.9% PLHIV eligible but not initiated on ART during financial year 2013-14, 4% had died, another 4% had been transferred out to other ART centres, 5% were undergoing treatment preparedness and 7% were LFU. Similarly of the 18% gap between initiated on ART and not retained in ART care, 7% had died, 4% transferred out to other ART centres, 1% opted out from treatment and 6% were the actual LFUs at this stage.

Onsite Review Findings

Onsite review reflected more in-depth information about the services being provided to the patients registered at these centres.

i. Baseline CD4 counts

The ART guidelines require that baseline CD4 count be done for every patient when s/he visits the ART centre for the first time and once s/he is registered. These counts decide whether the patient is eligible for ART or not. This service was being provided to almost all (97%) of the patients (Figure 3.18). About 5% of patients without

baseline CD4 count were initiated on ART between 2006 and 2007. During this period there were limited CD4 machines and ART initiation was predominantly based on WHO clinical staging. The increase is partly due to the procurement of CD4 machines across many of the centres, as well as the change in WHO guidelines which now mandates a baseline CD4 count before initiating ART, akin to the WHO staging.

A centre-wise break up of data shows that 93% (333) of the 357 centres had more than 90% patients (from among white cards reviewed) with baseline CD4 counts.

The onsite review of the patient White cards by the assessors revealed similar findings about the LFU, along with more in-depth information about the services being provided to the patients registered at these centres.

ii. Follow-up CD4 counts

According to the NACO guidelines, all PLHIV who are in HIV care (Pre-ART or ART) need to get their CD4 counts done at least once in every six months to either determine eligibility for ART or to assess their response to treatment or change in treatment regimen in case of immunological failure. Thus CD4 testing is one of the key services that must be made available at any ART centre.

This service was tracked only for those PLHIV who were in active care, as the information in the cards of those who had died, LFU or were transferred out, was not available for obvious operational reasons. The date of loss to follow-up was not mentioned on the card for the LFU cases. Given these limitations, this indicator was assessed based on only 14,152 (51%) of the 27,721 white cards reviewed.

Nearly 60% the patients on ART had undergone a CD4 investigation every six months and nearly 89%, at least once a year. Nearly 36% on "Pre-ART" care had undergone a CD4 investigation every six months and nearly 74% at least once a year. However, there has been an increase by 67% for "Pre-ART" and 81% undergoing regular CD4 count as per analysis done for the last three years.

The findings of the follow-up CD4 count must be interpreted in the context of:

1. There were limited CD4 count machines in the early part of the national programme.
2. The programme gave thrust to the ART patients compared to those on “Pre-ART” during the initial days.
3. The guidelines for maintaining patient treatment records (White card) for “Pre-ART” were issued in 2010 and therefore CD4 counts were not documented for “Pre-ART” patients till 2010. Therefore, it is possible that the non-availability of this information has led to an under-estimation of the performance under this indicator.
4. The investigation section in the patient treatment cards was incomplete in many of the centres. the methodology of the assessment required to interpret that which was not documented as not done. However, it was observed that centres were conducting investigations, reported this in the PLHIV green book but failed to do so in the treatment card. It is possible that the incompleteness of the data has led to under-estimation of the performance under this indicator.
5. About one-thirds (32%) of the ART centres do not have CD4 testing equipments within their own facilities. Though these centres have well-defined referral linkage plan with the nearest facility with CD4 counting machines. Blood samples are transported by the LT; however, since sample collection for CD4 testing is done on fixed days it leads to gaps in CD4 testing.

Best Practice 3.6: Tracking LFU

An ART centre in one of the district hospitals in Karnataka has started tracking of LFU through postcards. At the end of every month postcards with the message -"Please come and report to Room No XX of district Hospital, as soon as this card is received" – are sent to the registered addresses of the LFU patients. This initiative has had a few interesting outcomes - a) Some of the patients re-enter the programme upon receipt of the card; b) In some cases the post-card (which also has a return address in case it is undelivered) comes back because the address is wrong; c) in some others the cards are returned along with a death certificate, which allows the centre to update the patient status in their records. As the post-cards are cheap, and do not rely on any other cadre of service providers outside the ART centre, this appears to be a cost-effective initiative. However, the lack of a formal monitoring or assessment of the number of cards that have been sent and their outcome makes it difficult to decide whether this innovation can be called a success or not. However, this certainly is an area worth exploring.

In Pondicherry and Tamil Nadu, in an effort to reduce the number of LFU, the ART centre staff work in closely with the staff of the centres in the neighbouring districts and the Officers from SACS to track and individually counsell LFU and retrieve them into treatment regimens. This has had an enormous impact on reduction of LFUs. At the time of this assessment, this centre had no LFU among the patients on ART, and only one among those on “Pre-ART” care.

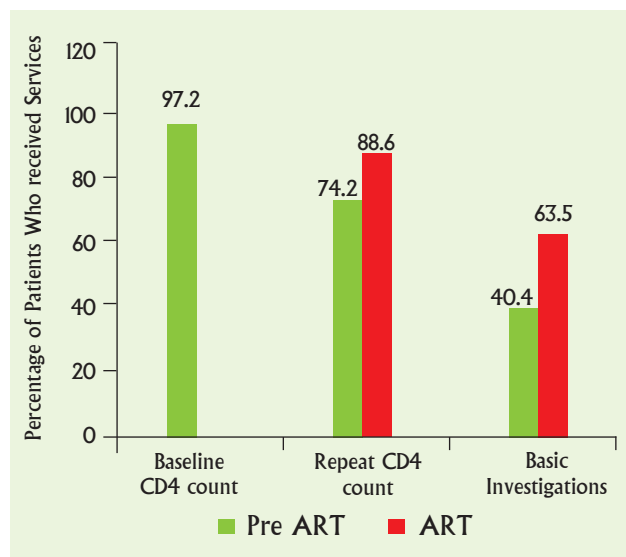
iii. Baseline basic investigations

All patients who register at an ART centre are required to undergo a few baseline basic investigations (such as Haemoglobin, Total Leucocyte Count, Differential Leucocyte count, Alanine Ttransaminase blood urea, serum creatinine, blood sugar, urine analysis among others) to assess their overall health status as well as fitness for ART.

Of all the white cards reviewed, nearly 64% patients on ART regime underwent most of the needed investigations regularly every six months (Figure 3.18). Reviewers observed that in some cases the information of these basic tests had been recorded in the green book available with the patients, but the corresponding entry on the white card was missing. Furthermore, in many cases, the District/Sub-district hospital where the ART centre was located did not have the laboratory facilities for conducting LFT or KFT. Therefore, the low rates for basic investigations may be attributed to both the absence of the required laboratory facilities as well as recording errors.

A centre-wise analysis of the results showed that there were 140 (39%) centres where all the basic investigations had been done for at least 80% of the patients on ART and 240 (67%) centres where these baseline investigations had been done for less than 50% of the patients.

Figure 3.18: Technical Service Delivery Status (as ascertained from the white cards)



iv. Initiation of ART

Of the white cards reviewed, a total of 17,097 PLHIV

were found to be eligible for ART, based on the CD4 levels and other parameters across all years for which ART centres were assessed of those found eligible, 83.2% has been initiated on ART. Some of those who were not initiated on ART despite being eligible had either been lost to follow-up or had been transferred out to the other centre, and the information was not available in their white cards. Further analysis revealed that in as many as 83.4% of ART-eligible patients ART preparedness was done and documented by the Counsellor in the previous month (N=1707). Median time taken to initiate ART was 9.4 days.

However, there was a large inter-centre variation with regard to the timely initiation of ART. While 83% eligible patients had been initiated on ART in time, only 60% of the centres had initiated more than 80% of their eligible patients on ART. Discussions with the ART centre staff revealed that the common reasons for delayed/non-initiation included:

- Late presentation of PLHIV leading to death before ART initiation.
- Geographical access to ART services as ART centres were few in the initial years.
- Turnaround time for the CD4 testing results at the linking ART centres.
- Delay in carrying out the base line investigations.
- Failure of the PLHIV to return owing to procedural delays and long distances between their home and ART centres.

v. Management of HIV –TB co-infected PLHIV:

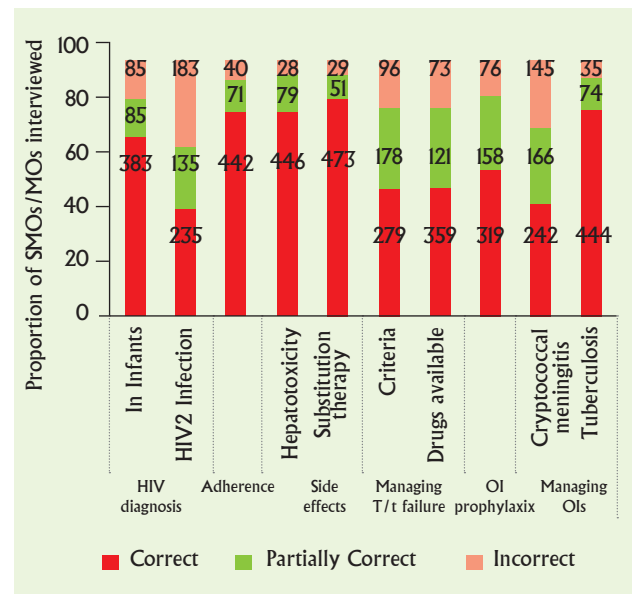
Review of HIV –TB register revealed that 90% of the PLHIV received ART in year 2013. Also, more than three fourths of the centres had initiated more than 80% of their HIV-TB co-infected patients on ART. The performance of ART centres ranged from 61 to 100%.

Best Practice 3.7: Laboratory investigations and referral for second line ART

One of the ART centre from Andhra Pradesh was one of the few centres that ensured that the basic investigations, follow-up laboratory tests and the CD4 count along with viral load monitoring was conducted for all patients on ART. The money for this was provided by the trust funds of this facility, and the patients did not have to bear any out of pocket expenditure. Regular and timely follow up of basic parameters, including those to rule out immunological failure ensured that the patients who were referred for second line ART to the ART Plus centre were eligible as per the norms.

In addition to checking the records for service delivery, the MOs and SMOs were interviewed to ascertain their knowledge on ART and related issues including diagnosis of infection, recognising and managing treatment failure, prevention and management of OIs among others. Their responses to various questions are presented in **Figure 3.19**. While most of them were found to be knowledgeable on most of the issues, the areas that require attention include diagnosis of infection by HIV2 variant; the criteria for diagnosing treatment failure; and the management of

Figure 3.19: Knowledge of SMOs and MOs regarding ART and related issues



relatively rare OIs such as cryptococcal meningitis. While many were not fully aware of the second line drugs for HIV, this is of relatively less concern, as the second line drugs are initiated at ART Plus centres and not by the SMOs and MOs.

Out of a maximum of 29 marks that could be scored for this attribute, the average score across the centres for “Technical service delivery” was 21. Of all, 138 centres were graded “Good” and 207 centres “Average”.

Figure 3.20: Distribution of scores for “Technical Service delivery” across states



Summary - Technical Service Delivery

Most of the ART centres were performing well and scores varied from “Good” to “Average”. The performance was found to be Good on parameters such as baseline CD4 count, follow up CD4 for on ART PLHIV, ART initiation of eligible PLHIV and management of HIV-TB co-infection. ART preparedness was also being done for majority of the PLHIV before initiating ART to ensure long term adherence of PLHIV to treatment. However, study of cohorts will be required to understand the retention in care and survival of PLHIV on ART which is beyond the scope of this assessment.

Focus on PLHIV in “Pre-ART” is important to ensure retention in HIV care. The ART centre needs to pay greater attention on the health needs of PLHIV who have not been initiated on ART and are in “Pre-ART” care. A careful monitoring of their biological parameters is important. This should ensure not just with the intention of initiating ART in a timely manner but also to track their overall health status and reduce morbidity in PLHIV. Provision of baseline investigations, regular CD4 count and counselling services at every visit to the “Pre-ART” patients will increase the perceived value of the services at the ART centre and thus encourage them to visit the centre in a regular and timely fashion.

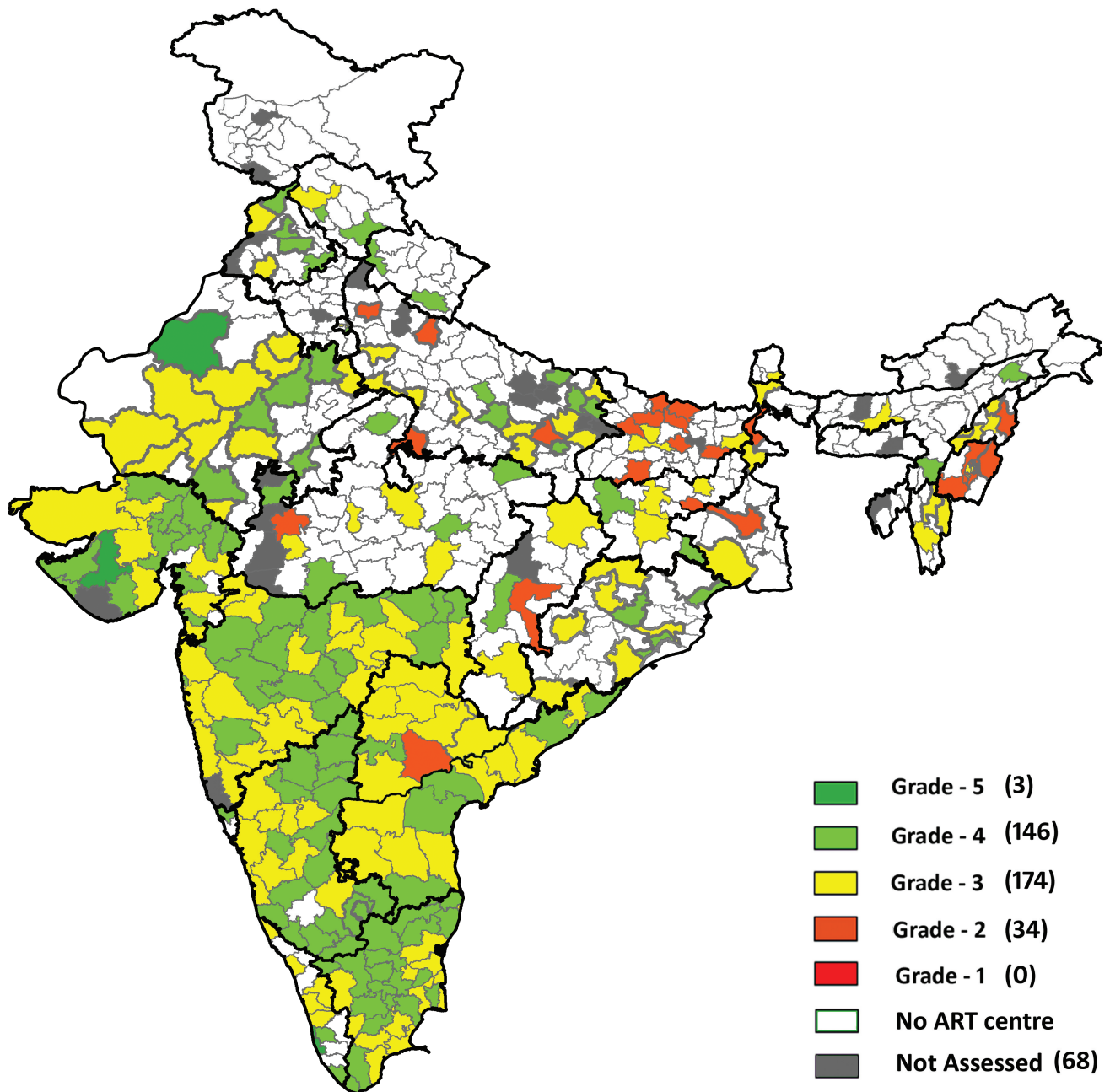
Majority of SMO/MOs were knowledgeable about most of the issues related to patient management including ART guidelines, diagnosis and management of opportunistic infections and recognition and management of treatment failure cases. It was also

found that their knowledge had direct relation with the quality of care which was being provided at the ART centres. This signifies the effectiveness of the trainings which is being imparted to them. However, the actual practices may vary as seen from findings of some of the key indicators. This underscores need for onsite mentoring and regular supervision. The Regional Coordinators under the programme have been very effective in monitoring and mentoring but their limited numbers is a constraint. As per programme guidelines, CoEs are also expected to provide mentoring support to the ART staff on programmatic and clinical issues. However, this aspect needs further strengthening.

The ART centres have been established in the medicine department and the HoD, Medicine has been designated as the Nodal Officer to facilitate institutional ownership. However, as can be seen from the findings under attribute 2, the involvement of institution and faculty is not optimal. In many cases, ART centres are managed by contractual ART staff provided by the programme which often experiences attrition and leads to gaps in quality care.

In conclusion, the combined average score for the 357 centres was 34 out of a maximum of 48. The geographical distribution of the five categories of scores is depicted on the map in **Figure 3.21**. Majority of the centres were in grade 4 (146) and 3 (174). When compared to the map for the Operations domain (**Figure 3.11**), this map shows fewer areas that are red indicating a relatively better performance under this domain.

Figure 3.21: Geographical distribution of centres by grades obtained in the Technical domain



3.3: Monitoring and Evaluation Domain

Monitoring and Evaluation is essential for improving programme performance. The availability of complete and accurate data contributes to the development of programme policy and planning and facilitates corrective actions for improvement. It also guides the ART staff to strengthen clinical management of PLHIV and helps attain long term goals of improving patient survival and reducing morbidity. Therefore, completeness, correctness and consistency of data form the basis of all monitoring and evaluation efforts.

Standardized tools for recording and reporting data are being used at ART centres across the country. These standardized tools include care and treatment records, stock management registers, referral formats and program performance monitoring formats. ART centres maintain patient records and update operational information about each patient. The data from the ART centres is made available to the state and national levels through the monthly data reported by each ART centres in the form of ART monthly report. The registers and records ("Pre-ART" register, and ART Registers, White card and Green book) and the lists (Master Line List, LFU Tracker list) maintained at the ART centre, assist the preparation of the ART monthly report (Figure 3.22).

The assessment team validated and triangulated the various data sources and checked the data for completeness, consistency and correctness. Variation between various data sources was calculated as a percentage, using one source, such as the MLL, as the standard for comparison against other sources with similar indicators.

Operational definitions:

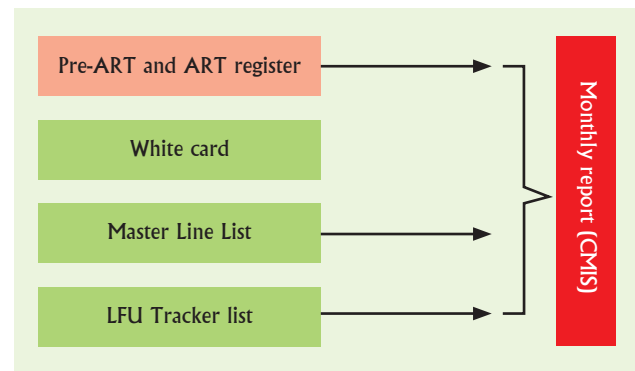
- **Completeness for**

Patient treatment card (White card)	Defined as "presence of all data elements pertaining to all Chapters 1.1, 1.3, 2.2, 2.3, 3.2 and 3.3 in the respective sampled cards." However, critical information was given more focus.
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HIV care ("Pre-ART") Registers	Defined as "the presence of all data elements in applicable columns of the "Pre-ART" register."
ART enrolment Registers	Defined as the presence of all data elements in applicable columns of the ART register.
Master Line List	Defined as "when the last registration number in the Master Line List is the same as in the "Pre-ART" register for the reported month."
Other Registers	Defined as "entry of all data elements under each record."

- **Correctness:** Correctness was defined as reporting of identical data elements of the sampled Record in all Registers and Records.
- **Consistency:** Consistency was defined as reporting of same outcome (status) in different Registers when compared to the Master Line List.
- **Verification:** Verification was defined as cross checking the information for transcription errors.
- **Validation:** Validation was defined as establishment of the reliability of the data reported.

Figure 3.22: Various sources of data at an ART centre



The process of data validation was divided into two attributes i) **Reporting** and ii) **Recording**. Reporting refers to generation of reports from the source registers and its transmission to SACS and NACO for monitoring and decision making. Recording primarily looked at the completeness of the registers and reports being maintained at the ART centres.

Best Practice 3.8: Maintaining clinical records and reports

At an ART centre in Delhi, all the White cards are kept in patient-wise individual files. The files also contain the lab investigation reports and other relevant records of the patient. The clinical history of the patient was very well documented in the case sheets. Such systematic documentation and filing is a pre-requisite for accurate recording and reporting. It also makes the process of data validation much easier.

The teaching hospital in Gujarat, leverages technology to maintain the records. The data from the white cards is transcribed on to MS Access based software. Unlike the excel-based MLL that is mandated by NACO, this has two advantages - a) It allows the entry of all the information available in the patient white cards as opposed to the 13 key indicators that have been specified in NACO's MLL; b) The user-interface for the data entry is similar to the white card, which makes data entry easier with reduces transcription errors that occur due to mixing up of columns and data entry fields. All the computers in the ART centre are connected by on a Local Area Network (LAN), and the staff members are computer literate. Thus the data for this centre can be accessed from any computer in the centre.

The teaching hospital in Tamil Nadu, uses the regular online Hospital Information Management System to maintain the records of patients attending the ART centre, just like they do for other services and departments. This, ART centre record keeping is mainstreamed with that of the rest of the parent institute.

3.3.1 Attribute : Reporting

This attribute assesses the accuracy of reporting to NACO and SACS by the ART centres. Accurate and consistent data is essential for programme management and effective monitoring. The assessors triangulated the information from various sources such as the

patient white cards; the Pre-ART/ART registers; the MLL; and the monthly report. The variance between various sources has been expressed as a percentage. This attribute was assessed by both desk review and verification of registers and reports on site.

Desk Review: Consistency between MLL and monthly report

The ART monthly report was compared with the Master Line List to understand the accuracy of reporting by the ART centre. As mentioned in **Part B, Chapter 2.5**, a desk review was conducted before the assessment team visited the ART centre. Upon receipt of MLL of each centre¹⁰, the data management team verified the information for adherence to the standard NACO format and assessed completeness of data entry of 16 indicators for all patients registered for HIV care. It was ensured that all the MLLs received from 357¹¹ centres were consistent with the NACO format.

Comparison of MLL with ART Centre monthly report to assess consistency in reporting

Following the general assessment for completeness (availability of data for all 16 indicators), the MLL from each centre was compared with the monthly report submitted by the centre to the NACO to assess the correctness of data in the monthly report. Certain key outcome indicators, which are available in both the MLL and the monthly report, were matched. Using the data in the MLL as the "standard" for comparison, the variation was calculated. For example, if the MLL had a cumulative number of 100 PLHIV registered for care, and the monthly report reflected only 95, this constituted a 5% under-reporting. The following indicators were compared to assess the variance:

- Total Number of PLHIV registered in HIV care
- Number of PLHIV in Active Care at the end this month (Not on ART+ on ART)
- Number of PLHIV Pre-ART care died ("Pre-ART" and on ART)
- Number of LFU ("Pre-ART" and on ART)

Figure 3.23 shows a composite picture of the variation between MLL and the monthly report for various outcome indicators (listed above) related to ART services.

¹⁰ The MLL is an excel sheet consisting of 16 data fields for each patient, and is maintained by the ART centre. The ART centres provided the MLLs via email to the assessment team prior to the onsite review.

¹¹ All the centres in Mumbai, except one (JJ hospital), and one centre in Chhattisgarh did not have / submit the MLL. These were excluded from the assessment as a completed MLL was a pre-requisite to be included in this study. NACO followed up extensively with the ART centres to ensure that the MLLs reach the assessment team before the onsite review.

Registration in care indicators

The analysis revealed a minimal variation between the MLL and the monthly report, for the indicator “total number of PLHIV registered in HIV care”. This is a pivotal indicator which forms the basis or denominator for all the other indicators reported in monthly report. Almost two thirds of the centres (230 of 357) had a variation of less than 2%. There was a significant range of average¹² variation for this indicator from 0.1% to 15.3%. Most of the centres with a high variation (more than 5%) were in the states of Telangana, Andhra Pradesh, Maharashtra, Karnataka and Manipur.

Retention in care indicator

Retention in care is captured by the indicator “Cumulative Number of PLHIV in Active Care”. This indicator considers both “Pre-ART” and on ART PLHIV retained in care. The median variance on negative side

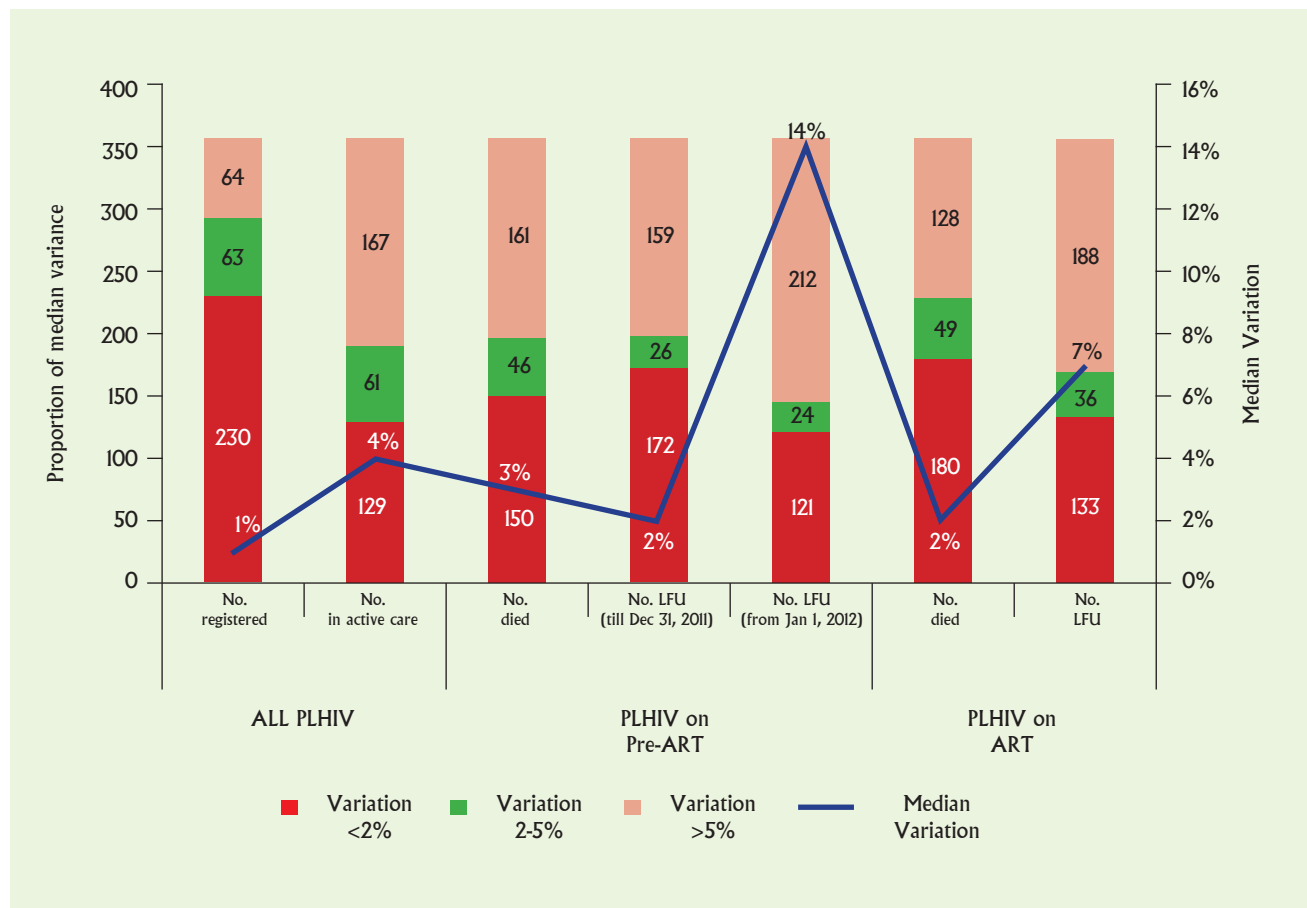
(under reporting) and on positive side (over reporting) was -10.6 and 10.3 respectively.

The indicator, “Total number of PLHIV on ART” which is a subset of PLHIV in active care, demonstrated a median variance range of (-8.4 & + 8.7). Though there were variations at ART centre level, at the national level, the over and under reporting cancelled each other.

Follow-up indicators

The variation was less among other indicators related to PLHIV on ART (except deaths), compared to those on the “Pre-ART” regimen. Similar to the gaps in follow-up CD4 count measurement this perhaps is a reflection of the greater focus and attention on patients who have been initiated on ART compared to those who are yet to become eligible for ART. The variation was less among other indicators related to PLHIV on ART, compared to those on the “Pre-ART”.

Figure 3.23: Variation¹³ between MLL and Monthly Report on key ART service indicators



¹² Average here refers to arithmetic mean.

¹³ The average variation presented here is the median of the percentage variation seen across the centres. The median has been chosen as the measure of central tendency due to outliers in the data.

Variance was observed across all the indicators. Variance was least for the indicator related to the total number of PLHIV registered in HIV care and the cumulative number of PLHIV in active care. Variance was higher for indicators pertaining to LFU, Death, and treatment status is stopped or opted out.

Upon further analysis onsite, reviewers found that that the variance may be due to misclassification of patients, incomplete MLL, the failure to update the MLL or transcription error by the Data Manager. They further observed that majority of the centres did not have a separate LFU tracker for “Pre-ART” and ART patients. Thus details of LFU or death could not be recorded in the MLL when source registers were unavailable.

The discrepancy between the source report/register and the Monthly report will have a bearing on the national estimates that are required to forecast expansion of centres and manage drugs and logistics. Training and retraining on preparation and reporting of indicators in the ART Monthly report may be required for all the Data Managers.

Onsite Review

Completeness of Reporting in Master Line List

The assessors compared the MLL with the centre’s “Pre-ART” Register to assess whether the MLL was being updated on a regular basis using the registers. The “Pre-ART” number from MLL and the corresponding number in the “Pre-ART” register were verified on-site as on 31 October 2013. The “Pre-ART” register was considered as the source document for comparing the completeness of the MLL. The MLL was considered as complete if the absolute numbers were congruent in the register and the MLL. Any disparity between the two was recorded as variance.

Assessment of Master Line List for Completeness, correctness

In order to assess the completeness of MLL, the MLL was compared with the “Pre-ART” and the total number of PLHIV ever registered in HIV care at that centre was reviewed. This number constitutes the **universe/denominator** for all the other indicators. Based on the “Pre-ART” records of 357 ART centres, a total of 18,22,598 patients were ever registered for HIV care across India as on 31 October, 2013. Comparison with the MLL revealed an overall absolute variance of - 0.5%. This indicates that the “Pre-ART” register has 0.5% fewer patients compared

to those enumerated in the MLL (an over-reporting in MLL). This could be due to the irregularity in updating the “Pre-ART” registers and/or duplicate entries in the MLL.

As seen in **Figure 3.24**, almost two thirds (232) of the centres had an updated MLL which more or less matched with the “Pre-ART” register. The variation between the two sources of information was less than +/- 2%. In 22% (79) of the centres, there was an over-reporting of more than 2% in the MLL (or “Pre-ART” register had fewer entries), whereas in about 13% (46) of the centres, the MLL under-reported the total number of patients registered at the centre, when compared to the “Pre-ART” register.

Figure 3.24: Variation¹⁴ between the MLL and Pre-ART register

79 centres	232 centres			46 centres
<-2%	-2%	0%	+2%	>2%

The MLL provides a clear understanding of the critical indicators required for the patient follow-up and monitoring the PLHIV clinically at the ART centre. Incomplete MLL impedes the follow up of the PLHIV and results in errors in reporting – under and over reporting of critical indicators in monthly report.

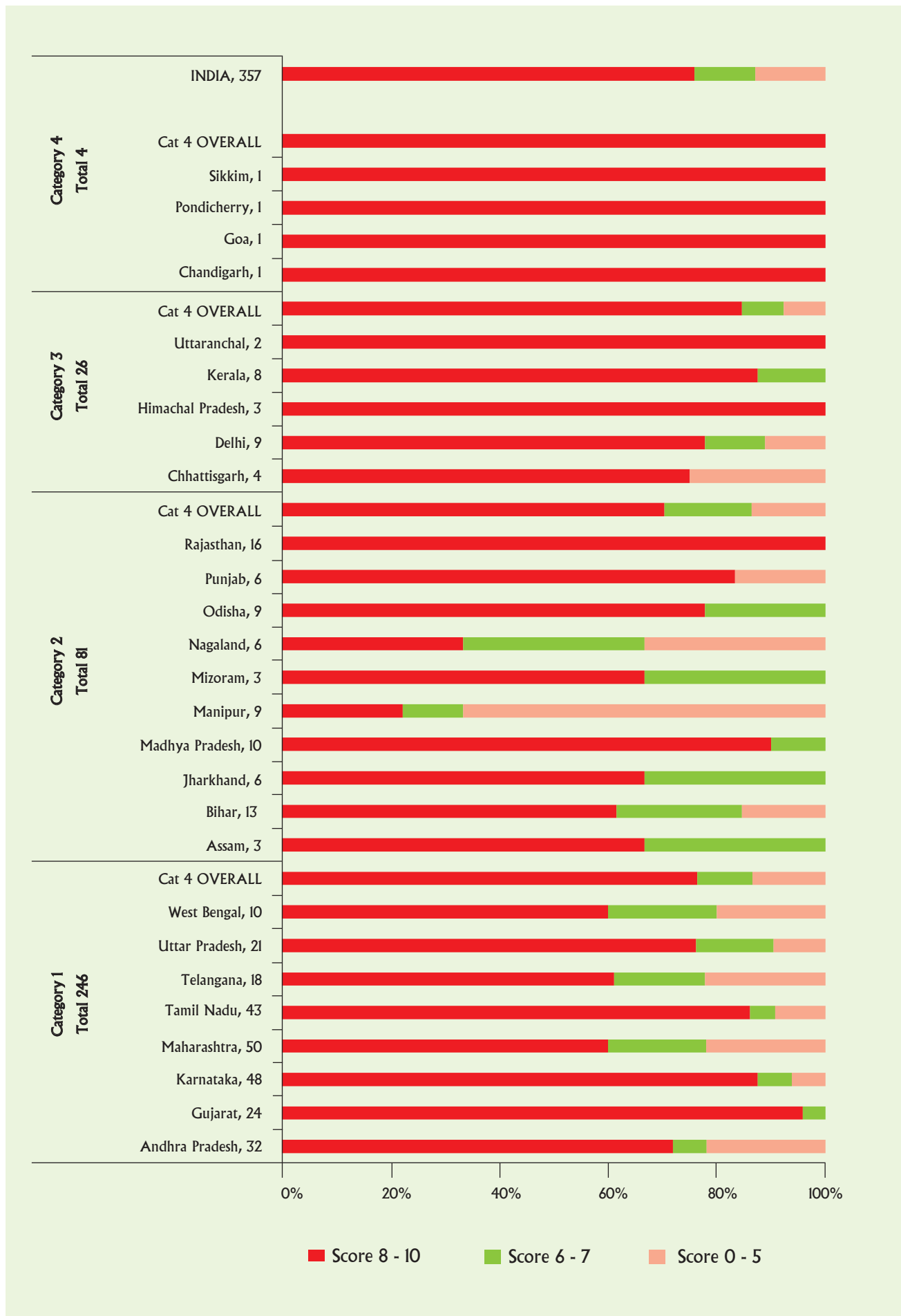
In order to assess the correctness of MLL the reviewers selected one most critical indicator –“current status of the patient from the White card and the MLL. The current status of the patient such as eligible but not initiated on ART; Died; or LFU from the patient White card were compared to the same indicators in the MLL. The assessment found an overall national variance of 21.6% (Range 0% - 87.2%). The variance was mostly due to the failure to update MLL.”

It is must be noted that at the time of the assessment, the preparation of a Master Line List (MLL) was a recently introduced activity. The assesmentn team faced initial challenges to get these lists complied and completed by the ART centres. Some centres were not updating it regularly as they didn’t understand the need for updating the MLL regularly. Therefore, the centres which were assessed in initial phase had higher variation and centres which were assessed at a later stage in the assessment had comparatively lesser variation.

The centres demonstrated good performance under this attribute. As seen in **Figure 3.25**, more than three in fourths of the centres (271) scored at least 8 marks out

¹⁴ Variation is calculated using the Pre-ART Register as the ‘standard’. A positive variance reflects more entries in the Pre-ART register, which corresponds to an under-reporting in the MLL compared to the register, while a negative variance indicates that the Pre-ART register has lesser entries compared to the MLL.

Figure 3.25: Distribution of Scores for Reporting across states



Correctness of Master Line List

The possible reasons for such major variations, especially in the patient status, were explored during the onsite visits, and include:

- The Data Managers find it difficult to regularly update the records manually.
- Data re entry done when the CMIS PLHA software changed to MS Excel-based MLL tool gave rise to transcription errors.
- Incomplete documentation was done in patient white cards when the patient was transferred out either within or outside the district.
- High case load and/or inadequate numbers and untrained staff has resulted in incomplete and incorrect record keeping and reporting.
- Non-maintenance of an LFU tracker makes it difficult to assess whether the patient was LFU or had died, leading to incorrect entries in MLL; and
- Incomplete source MLL (leading to an apparent 'over-reporting' in the CMIS, when in fact the gap was in the MLL which was considered the 'standard' for this assessment.)

of a maximum of 10. Nagaland and Manipur stood out in terms of poor scores for reporting, with only 33% and 22% of their centres respectively being graded "Good" or "Excellent" for this attribute. The average score across the 357 centres was 8.

3.3.2 Attribute : Recording

To enable accurate reporting in the CMIS (monthly report), it is important that all records available at the ART centre (patient white cards, pre-ART and ART registers etc.) are complete, as these form the base for preparation of various line lists, and for reporting to the NACO and SACS through the monthly reports. The assessors were asked to inspect various records and registers and verify the completeness of information with reference to a number of randomly sampled patient IDs (50 to 250 per centre, depending on case load). For pre-specified data points (such as identification details, family history, clinical investigations etc.) in the patient white cards and registers like the Pre-ART and ART registers, the assessors were required to score the entries from 0 to 4 for each data point based on the completeness of records.

Completeness of White card

The initial key details such as personal and family details as well as treatment regimen changes were

fully reflected in 85% of the white cards reviewed by the team. However, other information such as on basic investigations or on follow-up was recorded in only 50% of the white cards. This could be one of the reasons for low rates of basic investigations could be due to this.

While conducting this data validation exercise, the assessors could retrieve the White cards for all the patients in the random sample list in 222 centres. In the other 135 centres, not all the sampled white cards were retrievable, and proportion of non-retrieved white cards ranged from 1-58% in these centres.

Completeness of Pre-ART and ART Registers

In the registers, the proportion of columns filled to the total number of columns in the same was also considered a marker for completeness. In this regard, 90% completeness of the register was taken as a benchmark. While only 246 (69%) of the centres achieved this benchmark for the Pre-ART registers, a far greater proportion 78% (277 centres) achieved it for the ART register.

Availability of Lists: More than 50% of the centres maintained the list of patients eligible but not initiated on ART.

PLHA Software

For data entry, only 184 (52%) of the centres had the most recent version¹⁵ of the PLHA software available at the centre. Of these 184, 158 centres had achieved more than 80% data entry from the white cards and the registers into the software.

The assessors also checked for the availability of various technical and operational guidelines by NACO, including letters and office memorandums issues by NACO and/or SACS. These were found to be available and accessible in more than 50% of the ART centres.

Out of a maximum possible score of 17, the average score across the 357 centres for this attribute was 13.

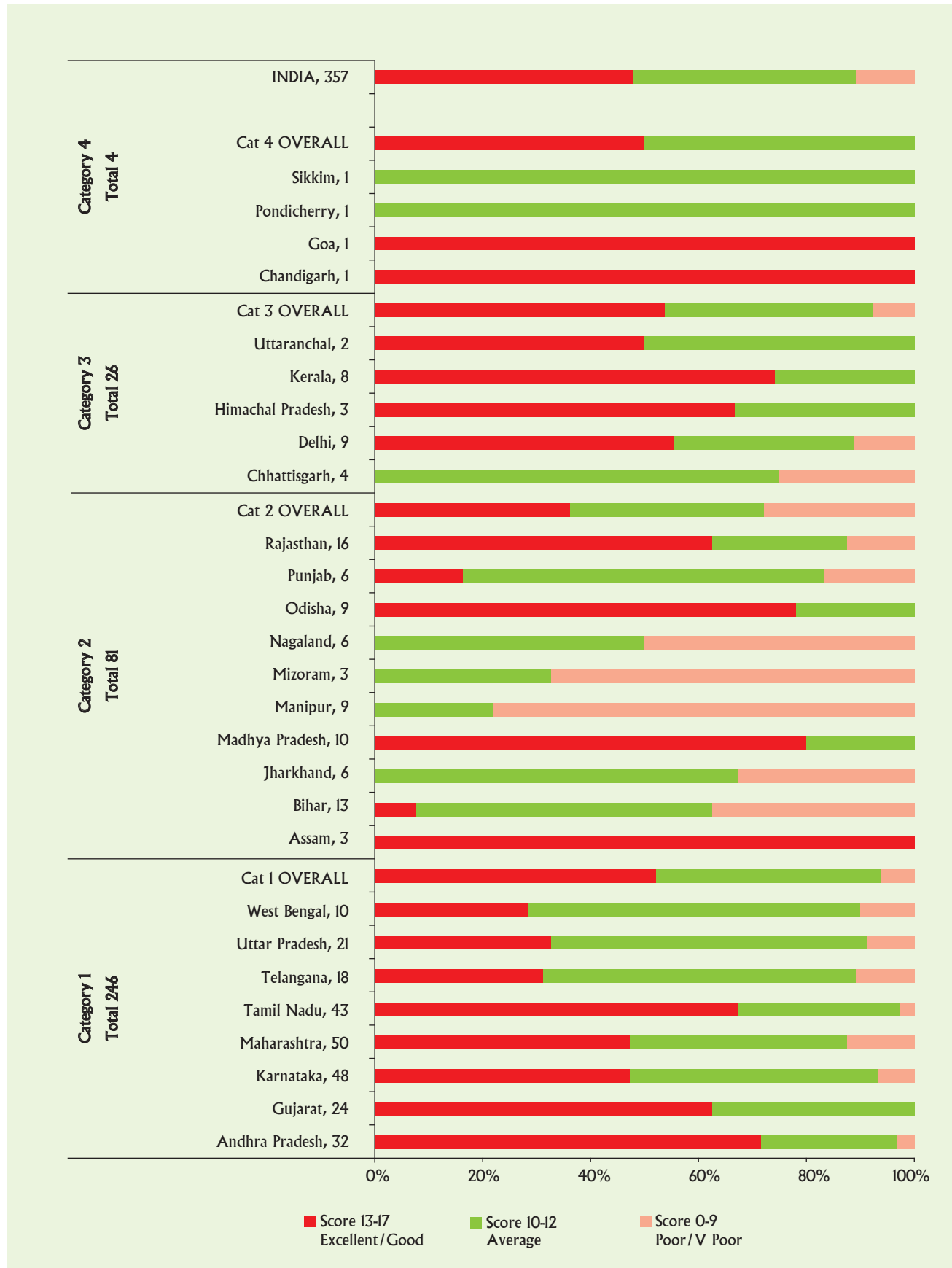
Figure 3.26 shows that almost half the centres were graded as "good" or "excellent" for this attribute. This was one attribute with perhaps the widest variation among different states. Taking in to account the states that have more than 1 ART centre (i.e. excluding the category 4 states), on one hand there were states like Madhya Pradesh, Andhra Pradesh and Tamil Nadu

¹⁵ Version 2.0.108 updated in 2013 is the most recent version of the software. It is linked to the CMIS.

with 80%, 72% and 67% of their centres being graded as good or excellent; on the other hand there were states like Chhattisgarh, Nagaland, Mizoram and

Manipur where not a single centre scored enough to be categorised in the top bracket, while Bihar had only 1 such centre out of a total of 13 in the state.

Figure 3.26: Distribution of scores for Recording across States

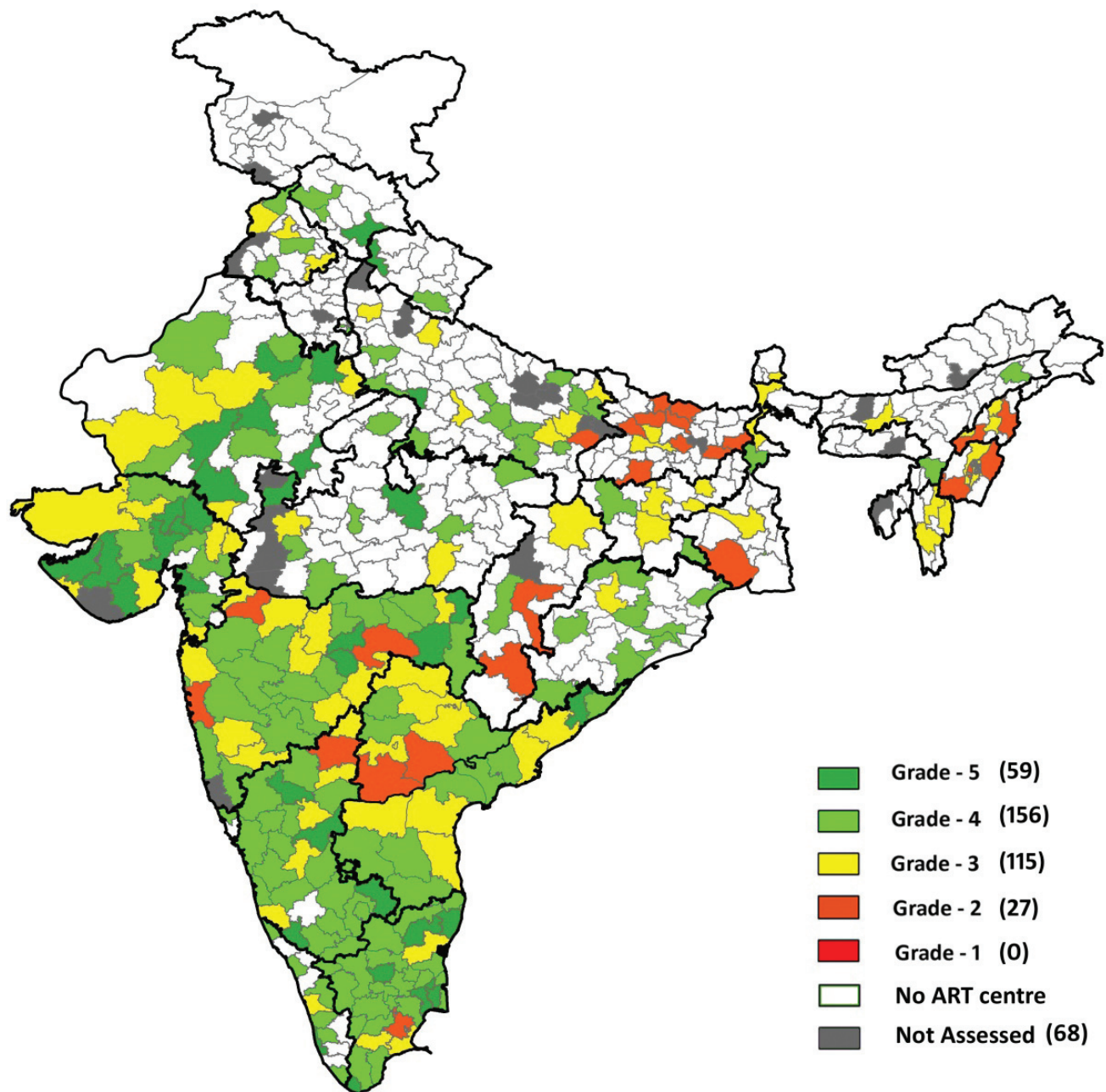


Summary - Monitoring Domain

Most centres demonstrated a satisfactory performance in the M&E domain. Nearly two-thirds of the centres were graded as 'Good' or 'Excellent' under this domain. This was despite the manual system of recording and reporting. The national programme need to focus on strengthening reporting by the ART centres.

- HIV is a chronic disease and once enrolled into HIV care the patients require life long follow up. A robust information and patient tracking system needs to be in place to ensure better patient care and tracking them across facilities and across states. This online recording and reporting system should also have in-built checks and balances, including alarms or warnings upon the entry of potentially discordant data.
- Further for any software to generate correct report, accurate and complete information needs to be provided as an input. Therefore, regular and timely updating of the key records and registers is of primary importance to reduce inter-source discrepancy in data. This should be emphasised during training sessions and supervisory visits.
- Given the current findings, the ART centres should focus specifically on data related to patients on "Pre-ART" care, and on indicators related to patient outcomes.
- To strengthen the data quality, NACO can consider instituting a system of validating data regularly onsite (perhaps similar to the one conducted as part of this assessment, but on a smaller scale) by the centre as well as SACS. Such periodic checks will help ensure better data quality.
- The data submitted by the centres through the monthly reports forms the basis of national level programme planning. Thus, the importance of reporting accurate data should be explained to the ART centre. Refresher training could be one modality of ensuring data accuracy, where sessions could focus on clarifying definitions of various terminologies such as LFU, transferred out, opted out among others.
- NACO/SACS should ensure training of all staff, especially the Data Managers on adequate data management and reporting. This includes regular refresher courses for those who have been trained previously, especially when there is an update/change in the reporting format.
- The purpose of data recording at ART centres is not only to prepare reports for submission to the higher levels but also to have data available for local and state level analysis.
- Most of the centres were merely transmitting the recorded data to the higher administrative structures and had limited capacity to utilize the data for improving services. ART staff should be trained to interpret and analyse the centre's data and utilize it for monitoring and improving retention of the PLHIV registered in the ART centre. ART centre should be further trained to utilize the data to assess self-performance against programmatic indicators.

Figure 3.27: Geographical distribution of centres by grades obtained in the M&E domain



3.4: Logistics Domain

The assessment reviewed the management of logistics, primarily the ARV drugs and financial resources under this domain. It was sub-divided into two attributes i. Inventory management and ii. Financial Management

3.4.1 Attribute : Inventory management

Large numbers of commodities are utilized under the NACP. Ensuring sufficient inventory without compromising transparency and accountability is a challenge for any programme. A strong inventory management mechanism at ART centres is essential to ensure appropriate, uninterrupted, efficient and transparent distribution of ARV drugs under the programme. The assessment aimed to track the process of drug flow from receipt of drugs by ART centres to drug dispensation to patients under this attribute. The ART drugs are procured centrally by the NACO and they are dispatched to states and the ART centres. ARV distribution in country follows a hub and spoke model. The NACO send the drugs to SACS and it acts as the hub for distribution and ensures the required quantity of drugs to ART centres. As the procurement and supply chain management of drugs is the obligation of NACO and SACS, the assessment did not review the parameters pertaining to the stock outs and procurement processes. Some drugs for opportunistic infections are provided by the NACP¹⁶ and some are provided by the general health systems.

The national programme has instituted stringent systems for recording and reporting the drug stocks at each ART centre. The assessment investigated multiple areas under this attribute. These include:

- i. Availability of key drugs at the ART centre, including those for OI.
- ii. Adherence to norms for storage, dispensing and disposal of expired drugs.
- iii. Validation of drug stock data reported by the centres by triangulating information between various sources, such as
 - Comparison of ART centre monthly stock report with the drug stock register- to understand the correctness of reporting drug stocks to NACO;
 - Comparison of the physical drug stocks with the drug stock register- to estimate the actual stocks at the centre;

- Comparison of the drug dispensing record with the drug stock register- to review the correct recording practise; and
- Comparison of the white cards with the drugs dispensing register- to ensure that correct drugs are being given to the patient.

To validate the drug availability at the centre, the reviewers were asked to choose two first line and one second line ARV drug for adults as well as children. Thus the stock data was validated for six drugs in all.

i) Availability of key drugs at the ART centre, including those for OI.

Figure 3.28 shows that less than half the centres had all the OI drugs.¹⁷ Another one-third or so either did not have the complete complement of OI drugs or did not have enough buffer stock to last them for two months. Similarly, about two-thirds of the centres had sufficient stock of Co-trimoxazole for two months, in both the tablet and syrup preparations. Drugs for post-exposure prophylaxis were available in 77% (274) ART centres at the locations prescribed by programme such as the labour room, emergency ward and causality.

ii) Adherence to norms for storage, dispensing and disposal of expired drugs

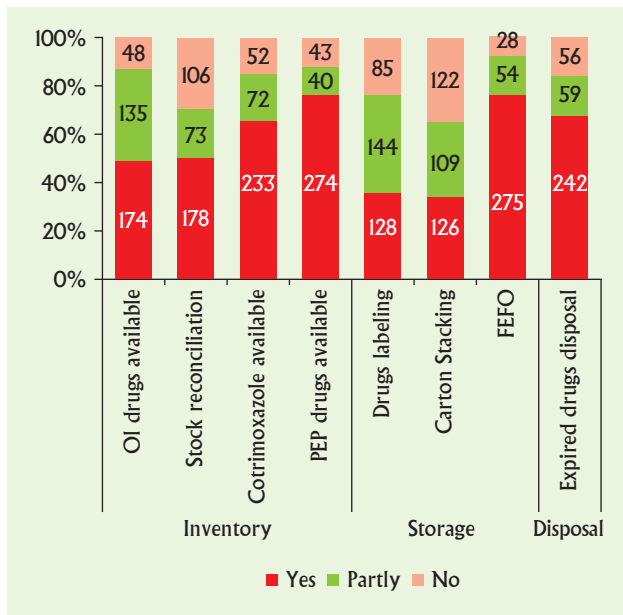
While almost 77% of the centres were abiding by the First Expiry First Out (FEFO) principle to prevent drug wastage, the actual storage of the drugs left a lot to be desired. Most of the centres were not adhering to norms for distance from the walls and floor while placing the drug cartons in the storage rooms. The norm is in place to prevent potential harm to the drugs due to moisture and rodents. Similarly, 229 of the 357 centres had not placed the cartons upright such that the labels with the drug name, expiry date and arrows pointing upwards (for syrups) could be clearly discerned.

Guidelines require that drugs (if any) that are past their expiry date are disposed in a safe manner to prevent potential misuse and/or harm to the patients. About 68% of the centres disposed the expired drugs as per the guidelines. However, there were 57 centres which lacked any system for disposing the expired drugs.

¹⁶ The OI drugs provided by programme are either procured by SACS and given to SACS or funds are given to ART centres for local purchase

¹⁷ OI drug availability was assessed as per the Institution's drug list, and included drugs like Metronidazole 400mg, Albendazole 400mg, Ciprofloxacin 500mg, Prednisolone 10mg, Paracetamol, Disprin, Anti-allergics, Antacids and Anti-diarrhoeal drugs.

Figure 3.28: Drug availability and management at ART centres



Comparison of ART monthly report with the drug stock register

The monthly drug stock report was compared with the drug stock register (reference) to assess the correctness of monthly drug stock reporting. Under reporting indicates reporting of less stocks in the monthly report compared to the actual drug consumption in the stock register. The validation of data on drug stocks revealed a strong correspondence between data available in the stock register and that reported in the monthly report, with negligible average variation¹⁸ of 0.1%. As seen from **Figure 3.29**, most of the centres (90%) did not have any variation between the stock register and monthly report, and only 3.9% (14) centres reported a variation of more than 10%. These centres were spread across nine states, which include Karnataka (3), West Bengal (2), Madhya Pradesh (2), Nagaland (2), Maharashtra (1), Andhra Pradesh (1), Telangana (1), Uttaranchal (1) and Goa (1). In-depth review of the causes of variation in these centres revealed that in half of these centres this was due to calculation error.¹⁹ Some centres had not included the drug stock at the Link ART centres due to non-availability of the monthly reports.

Comparison of the drug dispensing register with the drug stock register from randomly selected drugs at different time points

The drug dispensing register was compared with the drug stock register for randomly selected drugs documented at different time points in order to review correct recording practices. A fairly good corroboration was seen between the Stock register and the drug dispensing register. This is depicted by the size of the green zone in **Figure 3.29**. The variance was mostly due to error in transcribing from the dispensing to the stock register.

Comparison of the physical availability of drug stock with the recording in the stock register

The comparison of the physical availability of drug stock with the recording in the stock register revealed major discrepancies (variation of more than 5%) in 62 centres, and at least some variation, though less than 5% in another 92 centres. The assessment also had considered the variance in both the directions (- and +). The variance was both towards overstocking and understocking, in other words, 132 centres underreported the drug availability and 59 centres over reported. The in-depth review revealed that centres were not carrying out regular physical verification and reconciliation of drug stocks. The Nodal Officer/SMOs of only half of the centres had reconciled the ARV drug stocks in the last financial year and documented the process (signed). Nearly 30% centres did not follow any mechanism for reconciliation.

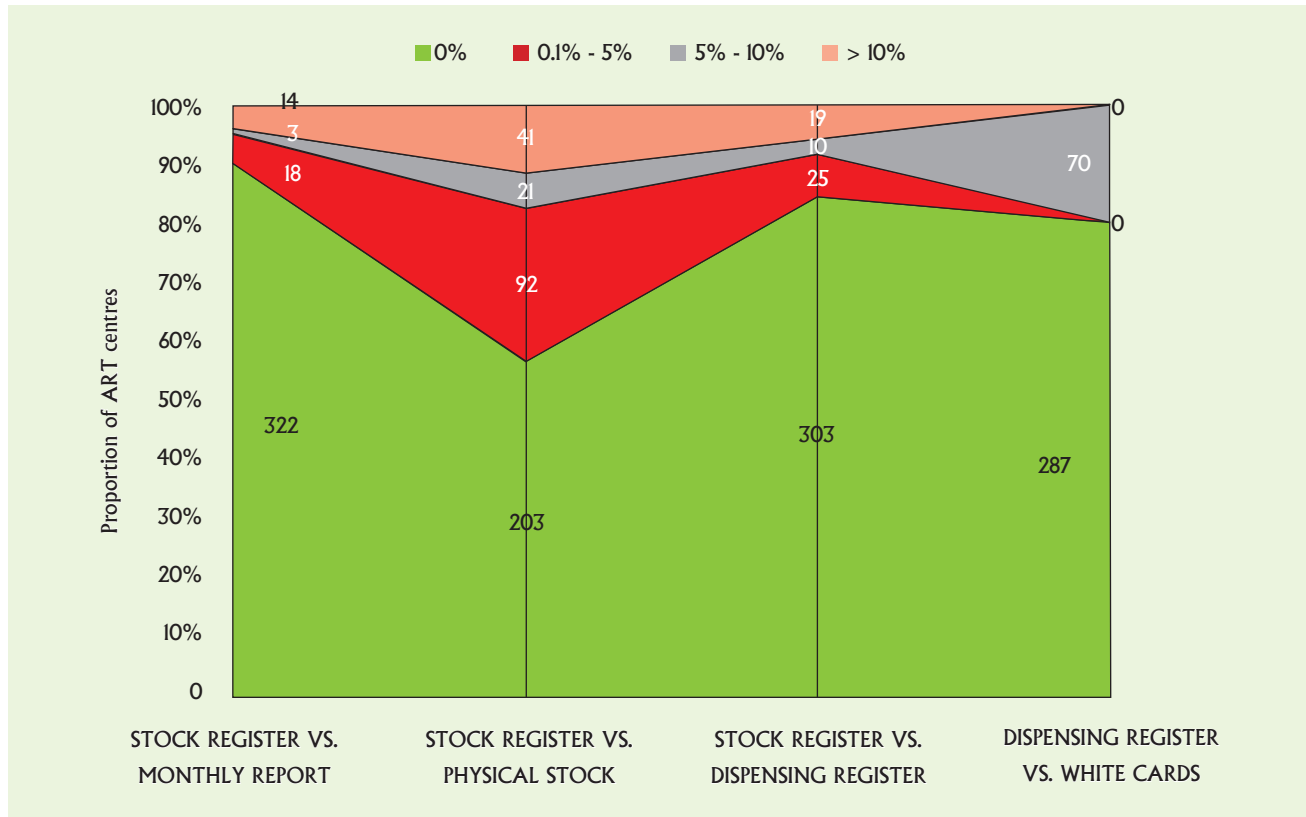
Comparison of the white cards with the drugs dispensing register

White cards of three patients on different treatment regimens were selected for each quarter in the year prior to the assessment to match the drug dispensing information between the patient white cards and the drug dispensing register. A total of 12 white cards were chosen per centre. The analysis revealed that 287 centres to have an almost absolute match, while the rest of the centres had a variation of more than 5% (5%-10%) between the white card and the drug dispensing register. This resulted from the non-entry of the regimen change in the white card.

¹⁸ The "average" here is a weighted average and has been calculated by taking into account the total number of drug quantity of all the regimes that were assessed, and is not a simple average of the variation seen across regimes. Therefore, variation drugs which were reported in greater numbers affect the average variation more than the other drug regimes.

¹⁹ Assessors compared the previous month reports for verification.

Figure 3.29: Absolute variation in reporting of drug stocks between various data sources

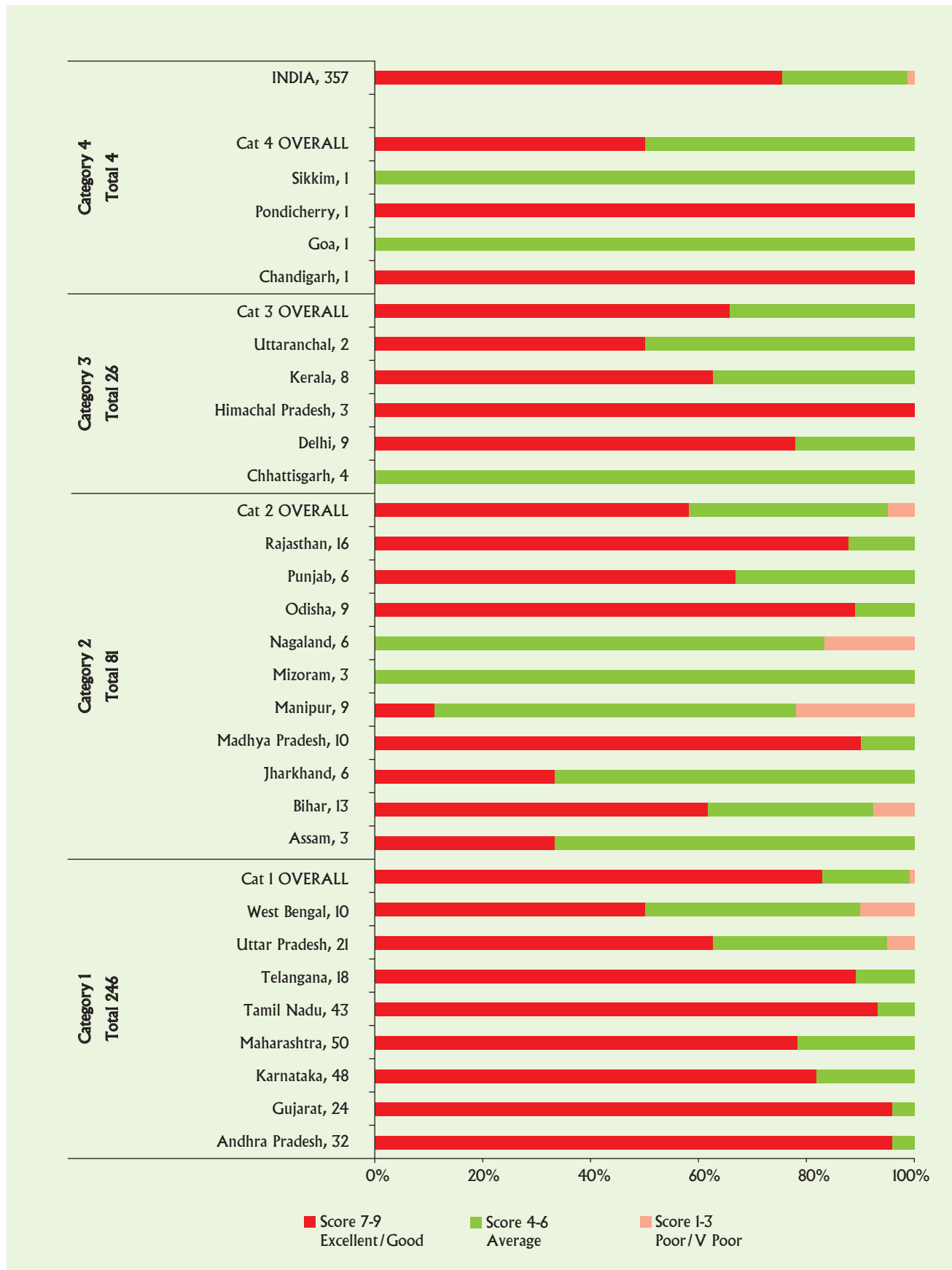


*The graph depicts the absolute variance

Despite the lapses in inventory management as noted above, the overall performance of the ART centres under this attribute was perhaps the best amongst all assessed as part of this review. Three-fourths of the centres were found to be “Excellent” or “Good” and

22% centres were graded as average for this attribute. Only six of the 357 centres were graded as “Poor or Very poor” (Figure 3.30). The average score across centres for this attribute was 7, out of a maximum possible score of 9.

Figure 3.30: Distribution of scores for Inventory Management across states



Summary - Inventory Management

In a nutshell, most (75%) of the centres were managing their inventory well with the performance varying from “Excellent” to “Good”. The recording and reporting was found to be as per the guidelines in majority of the centres. The drug stocks data from most of the data sources matched more or less with each other and was found to be correct and consistent though these records were being manually maintained by the ART pharmacists/nurse. Dispensing practices also tallied with the prescription in almost all centres. This indicates that the centres have a robust system of drug stock management. A computerised online system will further strengthen the system and facilitate online access to stock availability on real time basis at the state and national level. This will empower Programme Managers to take the necessary remedial measures.

However, discrepancy was observed when the drug stock register was compared to the actual count of available drugs on physical verification. Review revealed that this gap is influenced by the absence of periodic physical stock verification and reconciliation in about half of the centres. Therefore the centres are not able to correct errors in reporting. SACS should therefore reinforce the need to conduct the reconciliation on a quarterly basis, and also monitor this process as part of the CMIS reporting. Physical count of ARV drugs on sample basis should be undertaken during every visit of SACS officials and RCs. This will further emphasise importance of this exercise to the ART staff.

ART centres are one-stop centres for PLHIV for all CST related services. Assessment revealed gaps in availability of OI drugs. This finding was corroborated through beneficiaries’ interviews where non-availability of OI drugs was reported. It is imperative that ART centres have all the needed supplies including drugs for OI. The cause behind the non-availability of drugs for OI needs to be explored further and suitable actions must be taken to resolve the issue. For example, if procurement is a bottleneck in this process, then SACS needs to take measures for improvement. Most of the OI drugs are commonly available in general health systems. SACS should coordinate with the general health systems to ensure the availability of these drugs. SACS could also advocate for these drugs to be incorporated in State List of Essential Drug list (SLEM) to address the issue.

Another major gap was with respect to the storage practices. Most of the centres were not maintaining

the necessary distance from the walls and floor while placing the drug cartons in the storage rooms. The norm is in place to prevent potential harm to the drugs due to moisture and rodents. Similarly, three-fourths of the centres had not placed the cartons upright such that the labels with the drug name, expiry date and arrows pointing upwards (for syrups) could be clearly discerned. Further analysis revealed that nearly 30% centres did not have adequate pharmacy. In the high load ART centres where drug volumes are quite huge, drugs should be stored in main hospital pharmacy. It was also found that in many of the centres, pharmacist did not have adequate information about store management and drug keeping. As indicated under attribute 2, nearly 20% of pharmacists were found to be untrained. Regular training of pharmacists can ensure that storage practices are improved.

Best Practice 3.9: Preventing drug stock-outs

The teaching hospital in Rajasthan uses the state government scheme of free drugs (Mukhyamantri Nishulk Dava Yojana) to procure and supply ARV drugs (Nevirapine, Tenofovir+Lamivudine, Atazanavir and Ritonavir) for the patients during times of shortage or delay in receipts from NACO. This effectively prevents stock-outs and ensures adherence of the treatment regimen, without any additional out of pocket expenditure.

3.4.2 Attribute : Financial Management

The ART guidelines define certain financial management rules that each ART centre must follow to ensure proper use of the funds provided to the centre by NACO. Each centre must have a separate bank account (distinct from that of the parent institute) to receive funds from NACO. This should be jointly operated by 2-3 faculty members of the parent institution, one of whom is the Nodal Officer of the ART centre. Such joint operations are essential to maintain transparency in accounting and expenditure. The assessment revealed that 336 of the 357 centres had separate bank accounts for the ART centre. However, in some centres (63 of 336 which had bank accounts), this was not being jointly operated leading to a long drawn process of approvals for utilization of the funds received for the centre.

Centres are also required to follow standard accounting norms, such as the maintenance of a cash and ledger

book, and having petty cash (a maximum of INR 5000 to be drawn by the Nodal Officer as imprest money) available. While the cash book and ledger book were maintained by 304 centres (85%), these were not maintained as two separate documents in 42 ART centres. Petty cash was available in only 70% (248) of the centres. The findings are presented in Table : below:

Table 3.5: Availability of separate bank account and account books

	No. of centres N = 357 (%)
Bank Account	
Separate bank account maintained for the ART centre	336 (94%)
Account jointly operated by ART centre and the Institution	295 (82%)
Cash and Ledger Book	
ART centre maintains the Cash Book and Ledger Book	304 (85%)
Cash and Ledger Book are maintained separately	262 (73%)
Petty cash available	247 (69%)

In a nutshell, the financial management was satisfactory in 91% of the centres (combined score of the assessed centre was 1, maximum possible score being 1 for this attribute). Of the centres reviewed, the 9% of centres that scored relatively less in this attribute were mostly from Bihar and Maharashtra. In about 30% of the centres petty cash and account books were not maintained as per guidelines.

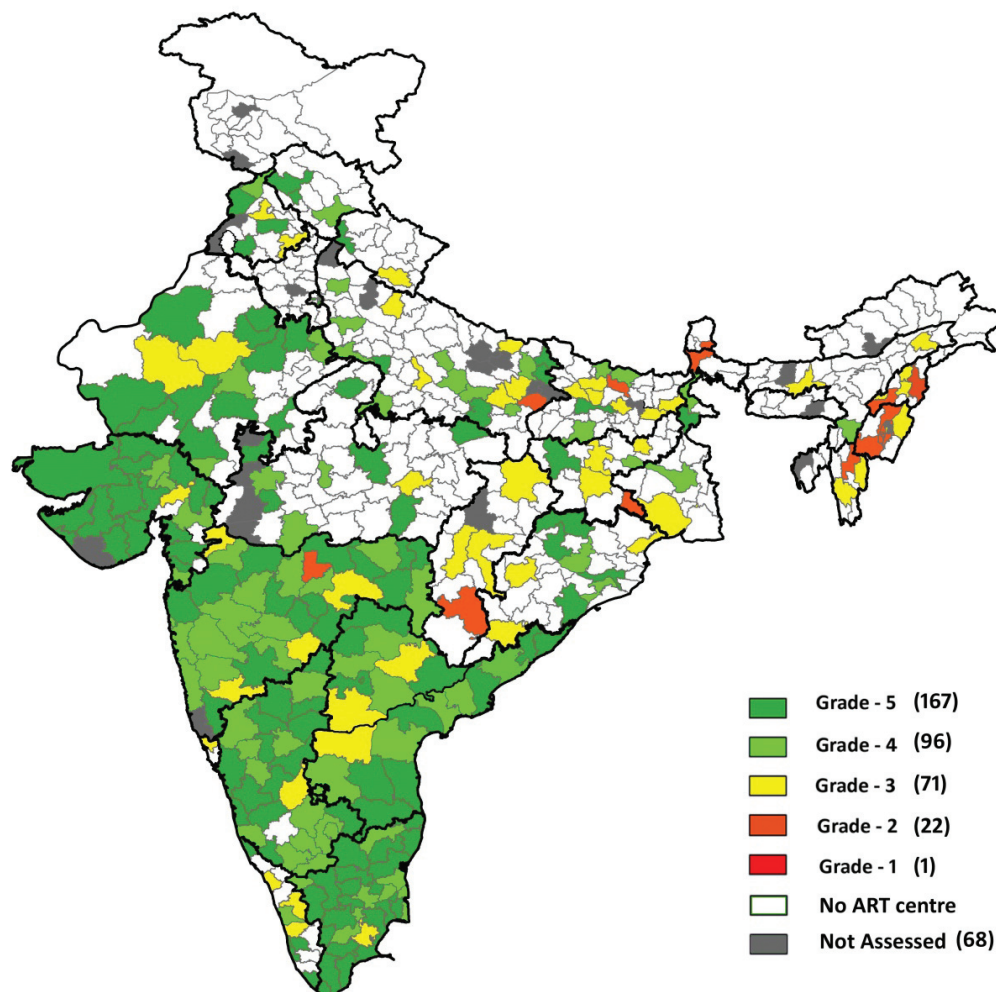
Summary - Financial Management

Financial management was satisfactory in all centres except 9% (32) centres.

Overall performance under logistics domain

The map in **Figure 3.31**, filled in green clearly indicates the performance under the Logistics domain. Almost three fourths of the centres were graded as “Good” or “Excellent” and only one centre was graded as “Very poor” having scored less than 3 out of a maximum of 10. Poor performance was observed in 7 of 9 centres in Manipur and 3 of 10 centres in West Bengal.

Figure 3.31: Geographical distribution of centres by grades obtained in the Logistics domain



3.5: Overall analysis

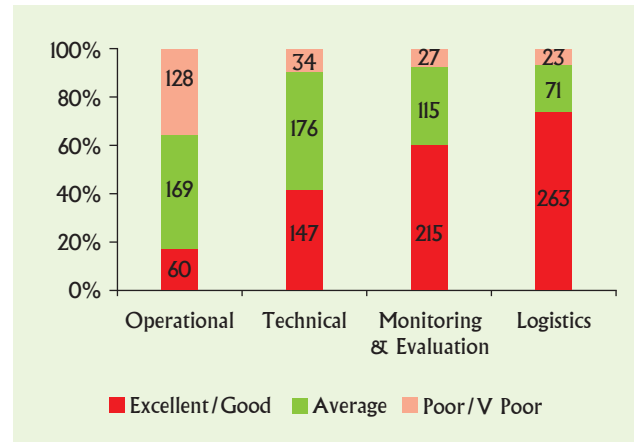
As mentioned in the relevant sections and also in Figure 3.32, the average performance of the ART centres kept improving as we moved from one domain to another. While the majority of the centres were graded “Average” for the Operations and Technical domains, the grading shifted to “Good” and “Excellent” for the other two domains. While none of the states had at least 50% centres graded as “Good” or “Excellent” in the Operational domain, seven states met this mark in the Technical domain, and higher numbers – 17 and 18 states achieved this under the Monitoring and Evaluation and Logistics domains respectively.

The stratified analysis based on type of the parent institute found that the district hospitals scored poorer under Operational domain but scored better under M&E domain as compared to Medical colleges. The scores in the other two domains - Technical and Logistics - were similar in both type of institutes.

Though each domain and attribute has been assessed separately, they cannot and should not be viewed in

isolation. For example, the lack of laboratory facilities for conducting basic investigations, as described under “Infrastructure”, has a direct bearing on the low rates of basic investigations being performed at the centres. Similarly, lack of staff and/or inadequate training, as assessed under “Human resources”, has an impact not just on the service delivery but also on the reporting and recording.

Figure 3.32: Overall Grades obtained by the ART centres across domains





Chapter 4

The Experiences of the Beneficiaries

Quality of Services – From the Beneficiaries Lens

The perspectives of the beneficiaries were captured by assessing their knowledge, experience and understanding of the ART service and seeking their feedback on the ART services. The core team felt the need to document the beneficiary experience as it is crucial to understand their perspectives about the services and their levels of satisfaction. Furthermore, such documentation can also bring out instances of stigma, discrimination if any, experienced by the PLHIV. This is in alignment with the core principles of NACP to keep communities at centre of our approach.

Selection of Beneficiaries: Five beneficiaries were interviewed from each ART centre. In order to understand the concerns of PLHIV and the issues faced, the core group felt that it was imperative that the experiences of PLHIV belonging to various groups or typologies be documented as part of this review. In order to ensure this, PLHIV were selected from various groups:

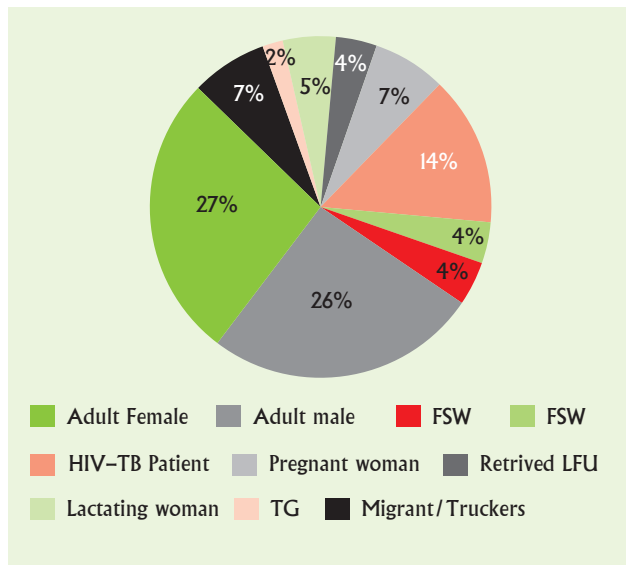
- i) one belonging to a high-risk group (FSW, MSM, IDU), or a vulnerable group (such as truckers/migrants);
- ii) one lost to follow-up (LFU) case that has been retrieved;
- iii) one HIV-TB co-infected;
- iv) one Pregnant or Lactating women; and
- v) one men and women from the general population of PLHIV.

The reviewers were asked to purposively select beneficiaries from these categories for the interview in a random manner. If such beneficiaries were not in attendance at the time of the review, or were less than five in numbers, men and women from the general population were selected for the interview.

Beneficiaries Profile: Based on the selection criteria and availability, 1785 (892 Male, 857 Female and 36 Transgender) beneficiaries were interviewed. In all, 882 beneficiaries were below the age of 35 years and 903 were 35 years and above. Of the beneficiaries interviewed 23.9% were illiterate, 30.9% had attained primary level of education, 33.9% secondary education and 10.7% had attained college level or further education. As per the reported occupation, 31.1% of the beneficiaries were agricultural/unskilled laborer, 20.6% homemakers, 11.5% belonged to the service class (Private and government). Another, 9.1% were drivers and cleaners, 5.9% each were involved in businesses and worked as industrial/factory worker. About 3.4% were unemployed, 0.68% students and 7.3% reported various other occupations.

Typology of the beneficiaries accessing the ART services is depicted in Figure 4.1. General beneficiaries constituted 53% (26% Male: 27% Female) of those interviewed under this assessment. Respondents also included 14% HIV-TB patients, 12% ANC/PNC, 7% Migrants/Truckers, 4% FSW/MSM/Retrieved LFU each and least 2% TG.

Figure 4.1: Typology of beneficiaries



Of the 1,785 beneficiaries interviewed, majority of the beneficiaries reported having been counselled about most of the aspects of treatment care and positive healthy living. The scores ranged from 63% to 96% across different centres and different states majority of the PLHIV (more than 95%) were satisfied with the care provided at the ART centres. Except for two PLHIV, none reported instances of stigma and discrimination at ART centre. There was no major variation in responses of the beneficiaries belonging to different groups. None of the beneficiaries reported having to purchase ARV drugs, however a few reported buying OI drugs from external pharmacies in addition some reported of accessing some investigations from private sector. Few beneficiaries did raise concerns about less than one month supply of some ARV drugs last year.

On the whole, interviews with the beneficiaries revealed that they lacked an understanding in areas in which they had received inadequate counselling. This was indicated by the patient's limited knowledge of condom

usage (47.9%). Two thirds of the beneficiaries (62.8%) reported that the pill count was not being done during each visit. Less than half of the beneficiaries (42.4%) reported that IEC material was used during the counselling sessions. Only 27.7% of the beneficiaries had received information about possible linkages with social welfare schemes, which needs to be taken care of.

It was heartening to observe that there were only nine instances of stigma and discrimination recorded in the complaint register in the ART centres assessed, and six of them had been addressed by the institution. This included beneficiaries from ART centres where complaint box was not available.

Interviews did not reveal instances where PLHIV were asked to pay for ARV drugs or were prescribed ARVs from outside the ART centres. However, Interviews with beneficiaries revealed that user fees were charged for routine tests in albeit in 10% of the centres. This is state specific as some states have made all routine investigations free for PLHIV. However, in some states, only specific investigations are free of charge. Beneficiaries from 26% (92) of the centres reported that OI drugs had to be bought from external pharmacies at times.

HIV-TB: In all, 256 beneficiaries were interviewed about HIV/TB related services. About 53% of the co-infected beneficiaries had been fast tracked and 80.5% had been provided information related to cough hygiene. Overall average of HIV-TB (average) 66.8% shows that there is need for improvement in HIV-TB services.

ANC/PNC: In all, 217 of pregnant and lactating women were interviewed. Two thirds of the women (61.3%) had been fast tracked. About 78% had been provided information about breast feeding and 72.8% had been counselled about the PPTCT (ANC, PNC, EID) services.

Table 4.1: Knowledge of beneficiaries on mandatory counselling topics

S.No	Indicator	% of beneficiaries
		N= 1785 (%)
1	Information provided on treatment preparedness	79.51
2	Details of ART side effects provided	68.52
3	Counselled on drug adherence	86.11
4	During every visit to the ART centre pill counting done	62.80
5	Counselled on follow up visits	95.91
6	Counselled at the time of giving CD4 test report	77.98
7	Counselled on importance of nutrition	85.15
8	Counselled on general hygiene	82.18
9	Counselled on cough hygiene	82.18
10	Counsellor used IEC material for counselling	42.35
11	Counselled on testing of spouse/partner/children	83.11
12	Information provided on linkages with social welfare schemes	25.77
13	Counsellor provided psychological support	89.41
14	Counselled on correct and consistent use of condoms	63.3
15	Condom use demonstrated	47.92
16	HIV-TB	
a	Attended on a priority (fast tracking) as compared to other beneficiaries	53.0
b	Provided information related to cough hygiene	80.5
c	HIV-TB Average	66.8
17	PPTCT	
a	Counselled on linkages with PPTCT (ANC, PNC, EID)	72.8
b	Attended on a priority (fast tracking) as compared to other beneficiaries	61.3
c	Counselled on breast feeding/infant nutrition	63.2
d	Type of Feeding (giving/going to give)	78
e	PPTCT average	72.5

Conclusion: In nutshell, the findings and the beneficiary interviews indicate that ART centres have a positive attitude towards the patients and provide good levels of satisfaction to clients. Majority of the beneficiaries reported being satisfied with the counselling services. The beneficiary interviews indicate that counselling has laid a good foundation

to facilitate the retention in care and adherence to treatment. It has helped in rapport building with the ART centres. Though various types of beneficiaries access the ART services at various times the services provided to them by the centres are without any discrimination, but have scope for improvement with respect to quality.





Chapter 5

Recommendations

The provision of high quality care has been our focus at all stages of service delivery. The NACP aims to provide “Universal access to comprehensive, equitable, stigma-free, quality care, support and treatment services to all PLHIV using an integrated approach”. This nationwide assessment of ART centres was conducted by the NACO with an overall goal to understand the quality of service delivery and identify systemic barriers to achieving the highest quality standards of ART service delivery and patient care. This assessment reviewed four domains namely Operational, Technical, M & E and Logistics comprising of 11 attributes necessary for the smooth delivery of ART services as well maintenance of quality care at the ART centres. Based on the findings under various domains and attributes, overall recommendation for improving the quality of ART services in the country are as follows.

5.1: Infrastructure

The overall performance of the ART centres was satisfactory under this domain. Most (80%) of the facilities were found to be clean and well-maintained. However, the pharmacy did require some attention as in more than 40% of the centres, the space allotted to the pharmacy was either inadequate or experienced excessive humidity, which has the potential to reduce the shelf life and increase wastage of the ART drugs. The ART centres will need to strengthen their efforts to create adequate space, storage facilities and shelving. Separate rooms were available for the ART staff in majority of centres. However, availability of nursing stations and counselling rooms with audio-visual privacy, were the key components of concern in almost half of the centres. Some states did not have

adequate infrastructure across all the ART centres which was in line with the overall health infrastructure in these states. These states will have to work in close coordination with the health systems in their states to overcome inadequacies. The centres with insufficient infrastructure will require major infrastructural improvements to meet the guidelines, enhance quality of service delivery and create a congenial environment for the PLHIV.

5.2: Human Resources

The assessment revealed that 80% of the ART staff positions were filled. The recruitment status for most positions such as Counsellors, Pharmacists, Data Managers, Care Coordinators and Laboratory Technicians was close to or more than 90%. While about three-fourths (74%) of the Medical Officers were in position against the required requirement, almost half (47%) of the SMO positions were vacant.

Centre-wise analysis of vacancies revealed that a significant proportion of centres did not have staff any positions filled for cadres of the SMO, MO and staff nurse. The vacancies for these cadres were spread across all the ART centres in country, reflecting underlying more systemic issues in availability of staff from these cadres. The systemic issues include non-availability of people from these specialized cadres, issues pertaining to remuneration and higher attrition rates due to better opportunities. The NACP will need to dwell on this issue further and design a way forward to tackle this problem. The possible solutions could be deputation of staff from the health system cadres and regularization of these staff positions.

5.3: Trainings

Of all the staff in position, almost 80% had received training according to the NACO guidelines. There was not much variation in the training status of various cadres. However, the programme should strive for training all the ART staff members as lack of knowledge, skills and competencies among the staff influences the quality of care. There were long delays in providing induction trainings to the newly recruited staff resulting in quality of service delivery as untrained staff members were interpreting the guidelines incorrectly. In addition, centres/states were not implementing refresher training in a fixed and regular manner to update staff on recent guidelines. States are therefore urged to plan and complete the training of all ART centre personnel who have been recruited till date. The plan should factor the need for ensuring timely training of newly recruited staff, regular refresher training sessions for the already trained staff.

5.4: Counselling

The ART centres are providing quality counselling. Counsellors were well informed about counselling topics pertaining to “Pre-ART”, ART preparedness Positive healthy living, ART care and treatment adherence. The quality and effectiveness of counselling was reflected in the knowledge and responses of the beneficiaries. Majority of the beneficiaries reported being satisfied with the counselling services. The beneficiary interviews indicate that counselling has laid a good foundation to facilitate the retention in care and adherence to treatment. It has helped in rapport building with the ART centres. The beneficiary feedback on this attribute was overall very positive.

However, some components of counselling at ART centres need strengthening as some centres did not demonstrate optimal performance under the counselling attribute. This could have been influenced by the vacant positions in high load centres and the gaps in training for some of the Counsellors.

5.5: Ownership by Health Systems

- The ART centres are established within existing health facilities that are augmented by the NACO through the provision of additional technical, human and infrastructure support to establish an ART centre. Therefore institutional ownership of ART services is vital for delivering quality services. Institutional mechanisms such as involvement

of Nodal Officer, involvement of medicine and other departments, the formation of an ART team, its regular meetings lead to an appropriate oversight and mentoring for the centres which is important to ensure its smooth functioning according to guidelines. These mechanisms need to be strengthened in many centres. Training of all health care providers on basic management of HIV and Universal Work Precautions will help in better involvement of the health facility staff. NACP-IV aims to accelerate the process of epidemic reversal and further strengthen the epidemic response in India through a cautious and well-defined integration process. Without this mechanism being strengthened, integration with health systems will be difficult and may compromise the quality of services.

- Programme aims at Universal Access to ART services (including “Pre-ART” care) to all PLHIV. Establishment of the decentralized mechanism for treatment delivery through the LACs is a step towards convergence with the larger health systems especially at peripheral levels. LACs have a key role to play in future of HIV care and management. There is need to strengthen this integrated model of service delivery by improving coordination and providing regular training, supportive supervision and mentoring. SACS and NACO will need to engage with the state health departments for facilitating effective convergence to ensure treatment adherence and retention.
- HIV should be included as one of the components of the monthly review meetings conducted by the District Collector in which health programmes such as TB, RCH and NVBDC are discussed.
- Most of the OI drugs are commonly available through the general health systems. However, it was reported that in many of the ART centres, PLHIV had to purchase OI drugs. SACS should work in close coordination with the health systems to make these drugs available. Furthermore, SACS should get these drugs incorporated in the State List of Essential Drug list (SLEM), as has been done by some centres in their hospital list for OI drugs, to ensure regular availability of OI and ARV drugs.
- Many states have made routine investigations available free of cost to the PLHIV and other states could emulate this practice.
- Though more than 80 % of the HIV –TB co-infected PLHIV were receiving ART, there is further scope for improvement in terms of coordination,

information sharing and facilitating single window services to reduce loss during cross-referrals between both programmes.

- Inter-sectoral coordination between the DAPCU, health system and the institution will enhance the linkages, institutional ownership and convergence.
- Considering the vacancies for specific staff cadre and the huge attrition rate, support from health systems would be required to establish a sustainable system for ensuring health care staff at the ART centres.

5.6: Attitude towards Patients

- The findings and the beneficiary interviews indicate that ART staff members have a positive attitude towards patients at most of the sites. None of the intensive interviews with the PLHIV (which included all categories of patients - FSW, MSM, IDUs, positive pregnant women, HIV/TB co-infected and general men and women), revealed any instances of stigma and discrimination by the ART staff.
- However, given the stigma and discrimination that surrounds PLHIV, a strong grievance redressal mechanism is essential to ensure patients have the platform to share the issues that they face at the health centres. This can be a powerful tool to improve services at the facility. Therefore, all ART centres should implement a robust and transparent redressal mechanism. States may be required to follow up with the ART centres and also resolve any such cases in the State grievance redressal committee meetings.

5.7: Infection Control Practices

Infection control constitute standard practices that are essential to ensure quality of health services in general and are not just specific to HIV/AIDS programme or ART service provision. Though the infection control practices reviewed were followed in some measure by at least 80% of the centres, these practices were not adhered to in totality. Systemic issues such as non-availability of infection control committees and requisite infrastructure such as running water lack of training of ART staff on infection control practices constitute some of the barriers in achieving optimal infection control considering the crowded settings of the ART centres and the vulnerability of the PLHIV and health care staff to TB infection, there should be ample focus to implement administrative, environmental and PPE measures of airborne infection control.

The health department in the states should to ensure the constitution of Infection Control Committees in all the facilities, especially in tertiary care facilities such as medical colleges and district hospitals where most of the ART centres are located. The SACS in the five identified states, where the Nodal officer of the ART centre is not a member of the Hospital Infection Control Committee in any facility, are encouraged to send a clarification note/order to all the parent facilities directing the inclusion of the Nodal Officer as a committee member.

5.8: Technical Service Delivery

Focus on PLHIV in “Pre-ART” is important to ensure retention in HIV care. The ART centre needs to pay greater attention on the health needs of PLHIV who have not been initiated on ART and are in “Pre-ART” care. The follow-up of the PLHIV on ART for the CD4 counts is more than 80%, however the ART centres should ensure focus on the PLHIV on “Pre-ART” care in close coordination with the CSC to enhance their follow-up with CD4 count.

Retention in care at all stages of HIV management is very important for ensuring quality of life, improving survival rates, preventing treatment failure and averting transmission. There is a need to reiterate emphasis and develop strategies including SoPs and trainings to strengthen retention in care. Linkage losses at each step (including those of HIV-TB co-infected & PPTCT) should be analyzed by the ART centres and steps taken to prevent PLHIV from becoming Lost to Follow up. This can be achieved through ensuring adherence to follow-up mechanisms such as the use of CD4 due list and daily due list. The collaboration with the Care Support centers, the positive networks and other outreach workers under NACP as well as health systems will also play a critical role in tracking LFU.

5.9: Monitoring

The data shared by the centres through the monthly reports forms the basis for the national level programme planning. Thus, completeness, correctness and consistency of data are very important. The ART center maintains critical information through the Master Line list in excel sheets. However, the manual and paper based updating of the data is inadequate. NACO may consider introducing user friendly software to facilitate correct and consistent data management at the ART centres.

- Program staff involved in monitoring should ensure that the records and reports are accurate.

The Program Officers could replicate the methods administered during the assessment for sampling the records and arriving at accuracy. To strengthen the data quality, NACO can consider instituting a system of validating data regularly onsite (perhaps similar to the one conducted as part of this assessment, but on a smaller scale) by the centre as well as SACS. Such periodic checks will help ensure better data quality.

- Most of the centres were merely transmitting the recorded data to the higher administrative structures and had limited capacity to utilize the data for improving services. ART staff should be trained to interpret and analyse the centre's data and utilize it for monitoring and improving retention of the PLHIV registered in the ART centre. ART centre should be further trained to utilize the data to assess self-performance against programmatic indicators.
- A patient tracking system needs to be in place for better patient care and tracking across facilities and across states.

5.10: Inventory Management

- The recording and reporting of drug inventory was as per guidelines in majority of the centres. Information from most of the data sources for drug stocks matched more or less with each other and was found to be correct and consistent though these records were being manually maintained by the ART pharmacists/nurse. Dispensing practices also tallied with prescriptions in almost all centres. This indicates that the centres have a robust system of drug stock management. A computerized and online system will further strengthen this system and enable the Program Managers at the state and National level to access real time stock availability data online which in turn empowers them to take the necessary remedial measures.
- The data validation exercise revealed discrepancies when the drug stock register was verified physically against the actual count of available drugs. Review revealed that this gap is influenced by the absence of periodic physical stock verification and reconciliation in about half of the centres. SACS should therefore reinforce the need to conduct the reconciliation on a quarterly basis, and also monitor this process as part of the CMIS reporting. Physical count of ARV drugs on sample basis should be undertaken during every visit of SACS officials and RCs. This will further emphasise importance of this exercise to the ART staff.

- Another major gap was with respect to the storage practices. Most of the centres were not maintaining the necessary distance from the walls and floor while placing the drug cartons in the storage rooms. The norm is in place to prevent potential harm to the drugs due to moisture and rodents. Similarly, three-fourths of the centres had not placed the cartons upright such that the labels with the drug name, expiry date and arrows pointing upwards (for syrups) could be clearly discerned. Further analysis revealed that nearly 30% centres did not have adequate pharmacy. In the high load ART centres where drug volumes are quite huge, drugs should be stored in main hospital pharmacy. It was also found that in many of the centres, pharmacist did not have adequate information about store management and drug keeping. As indicated under attribute 2, nearly 20% of pharmacists were found to be untrained. Regular training of pharmacists can ensure that storage practices are improved.
- The drug stock maintenance at the ART centres was largely as per guidelines. However the transcription and calculation errors may lead to over or under stocking of drugs. A national level MIS system for drug monitoring will be beneficial. Mechanism for quarterly physical verification and stock reconciliation should also be put into place.

5.11: Supervision & Mentoring

The findings of this assessment underscore the need for better and more frequent onsite mentoring and regular supervision. The Regional Coordinators under the programme have been very effective in monitoring and mentoring but their limited numbers and large number of facilities to be supervised by them is a constraint. The programme guidelines require CoEs to provide mentoring to the ART staff as well on programmatic and clinical issues. However, this component has not taken up fully and needs further strengthening.

The ART centres are established in the medicine department and the HoD Medicine is designated as the as Nodal Officer to facilitate institutional ownership. The involvement of institution and faculty members is not optimal and needs to be strengthened.

In many cases, ART centres are managed by contractual ART staff provided by the programme which often experiences attrition and leads to gaps in quality care.



CHAPTER 6

**ASSESSMENT UTILIZATION
PLANS – STEPS SO FAR**



Chapter 6

Assessment Utilization plans – Steps so far

The long term goal of any assessment is to facilitate improvements in services by identifying the gaps in service delivery and improve the performance so as to have good client satisfaction. To enable such improvements, it is important that the assessment exercise goes beyond just analysing and documenting the findings. The results of the assessment must trigger specific action plans not only to overcome the challenges faced by the centres but should also include replication of successes /best practices of some good centres to other centres/states across the country. Different actions may be required at different levels (the ART centres, SACS and NACO) to bring about these improvements.

Actions Taken Till Now

- It was felt during the assessment of few initial centres that preparation of detailed centre wise reports for all centres may take lot of time, so it was decided that immediately following the assessment of each centre, a centre-specific report on major points will be prepared that will give key points pertaining to the centre's performance as well as the gaps identified in its functioning. This report as well as verbal feedback was shared with the Nodal officer/ SMO/MO of the ART centre.
- Following the feedback, the ART centre team in collaboration with the assessment team, developed a detailed action plan to address the identified gaps. The plan delineated the actions as well as the timelines for their accomplishment and assigned responsibility of the tasks to identified ART staff member. This made the action plan robust and amenable to monitoring.
- Following the documentation of the centre-specific reports, the state-level reports were prepared. The reports presented overview of centre level findings in the state and provided some centre-specific results as well. The state specific reports have been shared with all the 27 states which had centres that were a part of this assessment. The state report focussed on actions that are required at the state level, through SACS. The need for strengthening monitoring, which was identified as a result of the assessment has been initiated by the states.
- The CST division of the SACS, along with the Regional Coordinators (RCs), have already begun monitoring of the centre specific action plans. They are also providing technical assistance to the centres to facilitate improvements in service delivery. Representatives from SACS and NACO are visiting the facilities where the data validation reflected a variation of more than 5% for the 13 key indicators. These centres are receiving hands-on support, guidance and mentoring in record keeping, data entry and analysis and reporting. The RCs have been asked to carry out structured data validation exercises comparing records and reports with the source records for these centres.
- To address the gaps that were common to a larger proportion of the centres (for example patient flow, fast-tracking of pregnant women, children and cough symptomatic, allocation of separate space/ cabins for maintaining the audio visual privacy among others), the NACO and SACS have circulated letters and office memorandum emphasising the importance of following the guidelines. The need

for conducting refresher training of the Nodal Officers/SMOs/MOs was identified as a result of the assessment and in three months nearly 400 Medical Officers were trained. To address concerns related to technical service delivery NACO has started conducting CME sessions for these cadres of ART staff enhance their competency. NPO (ART) conducted 2 NDLS seminars in which almost all ART centres participated and their queries on different aspects of ART (Technical as well as programmatic) were answered.

- For issues related to M&E tools, two more NDLS were conducted on M&E tools and retention cascade. In addition MOs and Data managers from all NE states were trained on M&E tools with support of WHO
- In order to reduce loss to follow up at various steps in retention cascade, all CST officials including data persons from most SACS were given hands on training and hand holding by NACO is being done so that SACS can do this analysis for their own states. 200 ART centres were trained on doing analysis of EWI and QCI Indicators to improve the outcomes and delay the emergence of drug resistance
- To tackle issues of uneven distribution of drugs at centres across the states, NACO developed and implemented an Inventory Management System at 450 ART centre with support from CHAI. This has

now been revised to include Link ART centres as well as capture information on CD counts as well. This version 2 is under field testing at present.

- Based on the action plans prepared, the centres are now required to share “Action taken” reports on a periodic basis. Till date, 102 of the 357 centres reviewed have shared their follow-up reports. The data mismatch was a concern in many centres and 40 of the 102 centres have reported their efforts to revise their MLL based on source records. About 12 of them have gone a step ahead and made the changes in the monthly report to reflect this revised/cleaned data. NACO is in the process of reviewing these reports and providing feedback to the centres. Following the reported revision in data, NACO, through its RDS, will further conduct a repeat data validation (comparing MLL with the monthly report) at the centres and compare the results related to variation with what was found in the assessment, to identify progress.
- NACO is following up with the centres which have not yet submitted the action taken reports.
- In order to improve the overall monitoring mechanism and ensure that this review does not remain a one-off evaluation in the system, NACO will utilize some of the tools developed for the assessment for regular monitoring. Regional Coordinators are being trained by NACO in the use of these tools.



Annexures

Core team and list of Assessors

1. Core Team

S. No	Name of the Member	Designation	Organization
1	Dr. A.S. Rathore	DDG CST	NACO
2	Dr. B. B. Rewari	NPO ART	NACO
3	Dr. Rajasekaran S	National Coordinator – ART Quality Management	NACO
4	Dr. Reshu Agarwal	Ex Program Officer, CST	NACO
5	Dr. Pauline Harvey	Director	CDC-DGHT
6	Dr. K. Sudhakar	Senior Advisor	CDC-DGHT
7	Dr. Sunita Upadhyaya	Senior Laboratory Advisor	CDC-DGHT
8	Dr. Ramesh Reddy Allam	Associate Project Director	SHARE India
9	Dr. Christopher Nathan	Consultant	SHARE India
10	Dr. K. Srinivasa Varma	Ex Senior Program Manager	SHARE India
11	Ms. Nalini Chava	Program Officer, M&E	SHARE India

2. Assessors list

S.No	Name of Assessor	Designation	Organisation
1	Dr. B.B Rewari	NPO, ART	WHO-India/NACO
2	Dr. Manish Bamrotiya	PO, CST	NACO-Delhi
3	Dr. Rita Prasad	PO, CST	NACO-Delhi
4	Ms. Nisha Kadyan	PO, CST	NACO-Delhi
5	Ms. Monika Walia	TO, CST	NACO-Delhi
6	Mr. Jis Jose	TO, CST	NACO-Delhi
7	Dr. Mahesh Mhetre	TO, CST	NACO-Delhi
8	Dr. Reshu Aggarwal	Manager	Central TB Division
9	Dr. Sunita Upadhyaya	Senior Lab Advisor	CDC-Hyderabad
10	Dr. Rajat Rana	TO, CST	SACS
11	Ms. Melitiz Vaz	Ex PO-Counselling	NACO-Delhi
12	Dr. Sukarma S Tanwar	National Consultant	WHO-India
13	Dr. Priyakant Nayak	Medical Consultant for RNTCP	WHO-Raipur
14	Dr. Laxmikanth Chavan	SI Consultant	WHO-India
15	Dr. Vimlesh Purohit	Senior Medical Advisor	ITECH-India
16	Dr. Anwar Parvez Sayed	Asst. Medical Advisor	ITECH-India
17	Dr. R. G. Anand	Regional Coordinator CST	TN SACS-Chennai
18	Dr. D. J. Borah	Regional Coordinator CST	NERO
19	Dr. Sunil Kumar Dodderi	Regional Coordinator CST	KSAPS
20	Dr. Jasjit Singh Mallhi	Regional Coordinator CST	Punjab-SACS
21	Dr. Archana Gupta	Regional Coordinator CST	UP SACS
22	Dr. Jiben Jyothi Baishya	Regional Coordinator CST	DSACS-Delhi
23	Dr. S. Thennarasu Sitrrarasu	Regional Coordinator CST	TN SACS-Chennai
24	Dr. A. S. Valan	Ex Regional Coordinator CST	TN SACS-Chennai
25	Dr. K. V.Emmanuel	EX Regional Coordinator CST	APSACS
26	Dr. Sripati Dasmohapatra	Ex Regional Coordinator CST	WB SACS-Kolkata
27	Dr. Suresh Shastri	Ex Regional Coordinator CST	Bangalore
28	Dr. Manoj Shevkani	Ex Regional Coordinator CST	Ahmedabad
29	Dr. Ashoo Singh	Ex Regional Coordinator CST	Meghalaya SACS-Shillong
30	Dr. Rekha Jain	Ex Regional Coordinator CST	Mumbai
31	Dr. Swapnali Patil	Ex Regional Coordinator CST	MAHASACS-Mumbai
32	Dr. Christopher Nathan	Ex Regional Coordinator CST	APSCAS
33	Dr. Ashkay Kumar Mishra	Ex Regional Coordinator CST	APSACS-Hyderabad
34	Dr. Sudhir Chawla	JD, CST	GSACS-Ahmedabad
35	Dr. Anant Hazarey	I/c Medical Superintendent	Govt. Hospital-Chandrapur
36	Dr. Rita Cross	Ex Joint Director, CST	KSACS-Kerala
37	Mr. Prashant Malaiya	Deputy Director-CST	MPSACS-Bhopal
38	Mrs. Ujjwala Ombase	Deputy Director-CCC	MSACS-Mumbai
39	Mr. Jitendra Joshi	AD, Nursing	Ahmedabad
40	Mr. R. K.Soni	AD, Nursing	SACS-Jaipur
41	Dr. Bubby S Kumar	Consultant, CST	TN SACS-Chennai

S.No	Name of Assessor	Designation	Organisation
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44	Mr. Ashish Aggarwal	Non Medical Research Fellow	CoE-PGI Chandigarh
45	Ms. Ankita Chourasia	Non Medical Research Fellow	CoE-BHU, Varanasi
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61	Dr. B. Sundaresan	Medical Officer	ART Centre,MCH-Coimbatore
62	Ms. Pavithra H B	M&E Officer	IGICH (pCoE) Bangalore
63	Dr. Sarita Singh	M&E Officer	pCoE, Delhi
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65	Mr. Mahesh Kumar	M&E Officer	APSACS-Hyderabad
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71	Mr. V. M. Saravanam	Data Manager	Stanley Medical College-Chennai
72	Ms. Asma Hasubhai	Data Manager	Dist Hospital-Dharwad
73	Mr. Shyamsundar	Data Manager	ART Centre-Raichur
74	Mr. Ravindra A. L	Data Manager	ART Centre-Hassan
75	Mr.Raghavendra Babu B. N	Data Manager	ART Centre-Kolar
76	Mr. Katin Rawal	Data Manager	ART Centre-Udaipur
77	Mr. Manisha Bhura	Data Manager	ART Centre-Jamnagar
78	Mr. K. Srikanth	Data Manager	ART Centre-Tenali
79	Mr. Chaitanya Kumar M	Data Manager	GGH-Guntur
80	Mr.Satish	Data Manager	Chest Hospital-Hyderabad
81	Mr.Kateen Rawal	Data Manager	ART Centre-Udaipur
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S.No	Name of Assessor	Designation	Organisation
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