Assessment of Awareness level regarding Computerized Management Information System and problems faced by staff at ART Centers in Delhi

A dissertation submitted in partial fulfillment of the requirements for the award of

Post-Graduate Diploma in Health and Hospital Management

by

Rajesh Singh



International Institute of Health Management Research

New Delhi -110075

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Certificate of Approval

The following dissertation titled "**Assessment of Awareness level regarding Computerized Management Information System and problems faced by staff at ART Centers in Delhi"** is hereby approved as a certified study in management carried out and presented in a manner satisfactory to warrant its acceptance as a prerequisite for the award of **Post-Graduate Diploma in Health and Hospital Management** for which it has been submitted. It is understood that by this approval the undersigned do not necessarily endorse or approve any statement made, opinion expressed or conclusion drawn therein but approve the dissertation only for the purpose it is submitted.

Dissertation Examination Committee for evaluation of dissertation

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This is to certify that **Mr. Rajesh Singh**, a participant of the **Post- Graduate Diploma in Health and Hospital Management**, has worked under our guidance and supervision. She is submitting this dissertation titled " **Assessment of Awareness level regarding Computerized Management Information System and problems faced by staff at ART Centers in Delhi"** in partial fulfillment of the requirements for the award of the **Post-Graduate Diploma in Health and Hospital Management**.

This dissertation has the requisite standard and to the best of our knowledge no part of it has been reproduced from any other dissertation, monograph, report or book.

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Date

Abstract

ABSTRACT Introduction: In 1992 India's first National AIDS Control Programme (1992-1999) was launched, and National AIDS Control Organisation (NACO) was constituted to implement the programme. In India after the completion of NACP I & II, NACP III was launched in 2007 and would be implemented till 2012. The overall goals of NACP-III is to halt and reverse the epidemic in India over the next five years by integrating programmes for prevention, care and support and treatment. Free drugs are being provided through ART Centers to people living with HIV/AIDS and some are availing private facilities. The NACP-III target was to scale up the ART mission to 250 centers by 2011-12 to provide free ART to 3, 00,000 adults and 40,000 children. The free ART initiative of the Government of India was launched on 1st April, 2004 at eight institutions in six high prevalent states and the National Capital Territory of Delhi. Since then, it is being scaled up in a phased manner. By March 2010, a total of 269 ART centers in 31 States and Union Territories are functional. More than 315640 patients are receiving free antiretroviral (ARV) drugs at these centers. **Methodology**: The current study is a prospective study; it aims to do a facility assessment as ART centers in New Delhi. The study consisted of random selection of ART centers, in-depth personal interviews with data manager, pharmacists and counselors. A total of 12 people were interviewed at 4 ART centers in Delhi. For this 4 data managers, 4 pharmacists and 4 counselors were interviewed. **Results:** This study has revealed that the level of awareness regarding the monthly format is highest among the data managers: 75% of data managers have very good awareness regarding the format, 25% have good awareness regarding the format. The level of information was least in Pharmacist 75% have poor while 25% have very poor awareness. 50% of counselors possess average awareness while 25% possessed good and 25% have very poor awareness.

If we look at the status of training we can see that 50% were trained or received any training before job among all respondents. 100% of counselors were trained before joining while 50% of data managers received any kind of training before joining. While none of the pharmacist received any kind of training before joining. After joining 50% of data managers and 50% of counselors received training.

If we focus on the training requirement as told by the respondents an overall of 91% respondent felt the need for training. 100% of data managers felt the requirement of training, 50% among them said they need more knowledge regarding monthly reporting format while 50% regarding OI types and episodes. 100% counselors felt the need for training; most of them said that they would like to know how they can counsel pediatrics cases. 75% of Pharmacist said they want training regarding monthly formats. The awareness for the indicators in the reporting format varies with the respondents. **Conclusion:** More than two hunderd ART centres are providing treatments to over 3.15 lakh persons Living with HIV/AIDS in the country. The study revealed the need for training, proper supervision, proper supply of cards, some more filteration options in reporting format, presence of scanners as an option, some minor changes in the reporting format. Better supervision of the staff by the supervisor is also recommended

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List of Abbreviations

HIV- Human Immuno- Deficiency Virus
AIDS- Aquired Immuno-deficiency Syndrome
NACO- National AIDS Control Organisation
NACP- National Aids Control Programme
SACS- State Aids Control Society
TI- Target Intervention
PLHA- People Living with HIV-AIDS
ART- Anti- Retro viral therapy
ARV- Anti retro viral
OI- Opportunistic Infection
HOD- head of the department
OPD- Out patient department
CD- Compact Disc
DVD- Digital Video Disc
RAM- Random Access Memory
SOP- Standard Operating Guidelines
CMIS- Computerized Management Information System
ICTC- Integrated Counselling & Testing Centre
CST- Care Support & Treatment

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I. INTERNSHIP REPORT

1.1. Organization Profile-

National AIDS Control Organization (NACO)

National AIDS Control Organization is a division of the Ministry of Health and Family Welfare that provides leadership to HIV/AIDS Control Programme in India through 35 HIV/AIDS Prevention and Control Societies representing respective States & Union Territories. In 1986, following the detection of the first AIDS case in the country, the National AIDS Committee was constituted in the Ministry of Health and Family Welfare. As the epidemic spread, need was felt for a nationwide programme and an organisation to steer the programme. In 1992 India's first National AIDS Control Programme (1992-1999) was launched, and National AIDS Control Organisation (NACO) was constituted to implement the programme. In India after the completion of NACP I & II, NACP III was launched in 2007 and would be implemented till 2012. The overall goals of NACP-III is to halt and reverse the epidemic in India over the next five years by integrating programmes for prevention, care and support and treatment. This will be achieved through a four-pronged strategy:

- Prevent infections through saturation of coverage of high-risk groups with targeted interventions (TIs) and scaled up interventions in the general population.
- Provide greater care, support and treatment to larger number of PLHA.
- Strengthen the infrastructure, systems and human resources in prevention, care, support and treatment programmes at district, state and national levels.
- Strengthen the nationwide Strategic Information Management System.

The specific objective is to reduce the rate of incidence by 60 per cent in the first year of the programme in high prevalence states to obtain the reversal of the epidemic, and by 40 percent in the vulnerable states to stabilise the epidemic

Among the preventive services are awareness generation, condom promotion, prevention of parent to child transmission, increasing ICTC services, promotion of voluntary blood donation and access to safe blood. The policies also have guidelines on Targeted Interventions (TIs) for high risk groups like injecting drug users (IDUs), men having sex with men (MSM), female sex workers (FSWs) etc. Apart from this, policies have extensive guidelines on the management of common opportunistic infections, malignancies among adult/adolescent PLHA and operational guidelines for ART centres to standardise ART services across the country. The National Policy on Blood Banks ensures adequate supply of safe blood and blood components.

In the current setting NACO comprises of eight divisions which are further divided into various sub units. The eight divisions are as followed:

a) Basic Services Division

b) Care Support & Treatment

c) Monitoring, Evaluation, Research & surveillance

d) IEC (Information, Education & Communication)

e) Blood Safety

f) Lab Services & Training

g) Administration

h) Finance & Procurement

Vision and Values:-

NACO envisions an India where every person living with HIV has access to quality care and is treated with dignity. Effective prevention, care and support for HIV/AIDS is possible in an environment where human rights are respected and where those infected or affected by HIV/AIDS live a life without stigma and discrimination.

NACO has taken measures to ensure that people living with HIV have equal access to quality health services. By fostering close collaboration with NGOs, women's self-help groups, faith-based organisations, positive people's networks and communities, NACO hopes to improve access and accountability of the services. It stands committed to building an enabling environment wherein those infected and affected by HIV play a central role in all responses to the epidemic – at state, district and grassroot level.

NACO is thus committed to contain the spread of HIV in India by building an all-encompassing response reaching out to diverse populations. We endeavour to provide people with accurate, complete and consistent information about HIV, promote use of condoms for protection, and emphasise treatment of sexually transmitted diseases. NACO works to motivate men and women for a responsible sexual behaviour.

NACO believes that people need to be aware, motivated, equipped and empowered with knowledge so that they can protect themselves from the impact of HIV. We confront a stark realty – HIV can happen to any of us. Our hope is that anyone can be saved from the infection with appropriate information on prevention. NACO is built on a foundation of care and support, and is committed to consistently fabricate strategic responses for combating HIV/AIDS situation in India.

NACO envisions:

· Building an integrated response by reaching out to diverse populations.

· A National AIDS Control Programme that is firmly rooted in evidence-based planning.

· Achievement of development objective

· Regular dissemination of transparent estimates on the spread and prevalence of HIV/AIDS

· Building an India where every person is safe from HIV/AIDS

· Building partnerships

· An India where every person has accurate knowledge about HIV and contributes towards eradicating stigma and discrimination

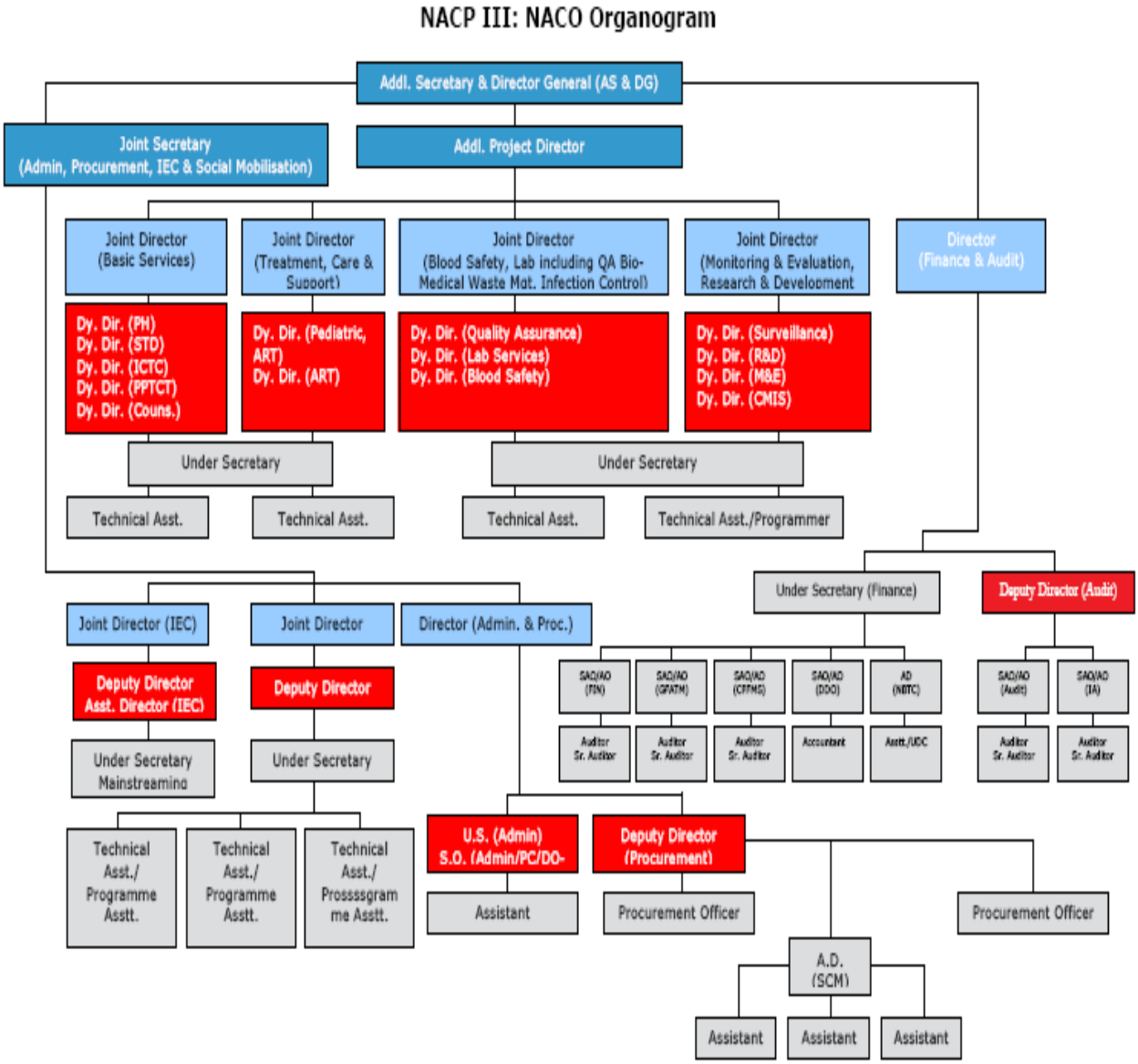
· An India where every pregnant woman living with HIV has the choice to bring an HIV free baby into the world

· An India where every person has access to Integrated Counselling & Testing Centres (ICTCs)

· An India where every person living with HIV is treated with dignity and has access to quality care

· An India where every person will eventually live a healthy and safe life, supported by technological advances.

Organogram-


NACP III: NACO Organogram
Addl. Secretary & Director General (AS & DG)
Joint Secretary (Admin, Procurement, IEC & Social Mobilisation)
Addl. Project Director
Joint Director (Basic Services)
Joint Director (Treatment, Care & Support)
Joint Director (Blood Safety, Lab including QA Bio-Medical Waste Mat. Infection Control)
Joint Director (Monitoring & Evaluation, Research & Development
Director (Finance & Audit)
Dy. Dir. (PH)
Dy. Dir. (STD)
Dy. Dir. (ICTC)
Dy. Dir. (PPTCT)
Dy. Dir. (Couns.)
Dy. Dir. (Pediatric, ART)
Dy. Dir. (ART)
Dy. Dir. (Quality Assurance)
Dy. Dir. (Lab Services)
Dy. Dir. (Blood Safety)
Dy. Dir. (Surveillance)
Dy. Dir. (R&D)
Dy. Dir. (M&E)
Dy. Dir. (CMIS)
Under Secretary
Under Secretary
Technical Asst.
Technical Asst.
Technical Asst.
Technical Asst./Programmer
Under Secretary (Finance)
Deputy Director (Audit)
Joint Director (IEC)
Joint Director
Director (Admin. & Proc.)
SAO/AO (FIN)
SAO/AO (GFATM)
SAO/AO (CPFMS)
SAO/AO (DDO)
AD (NBTC)
SAO/AO (Audit)
SAO/AO (IA)
Auditor Sr. Auditor
Auditor Sr. Auditor
Auditor Sr. Auditor
Accountant
Asstt./UDC
Auditor Sr. Auditor
Auditor Sr. Auditor
Deputy Director Asst. Director (IEC)
Deputy Director
Under Secretary Mainstreaming
Under Secretary
Technical Asst./ Programme Asstt.
Technical Asst./ Programme Asstt.
Technical Asst./ Prosssgramme Asstt.
U.S. (Admin) S.O. (Admin/PC/DO-
Deputy Director (Procurement)
Assistant
Procurement Officer
Procurement Officer
A.D. (SCM)
Assistant
Assistant
Assistant

1.2. Division's Profile

Care, Support and Treatment Division:-

The care, support and treatment needs of HIV positive people vary with the stage of the infection. The HIV infected person remains asymptomatic for the initial few years; it manifests by six to eight years. As immunity falls over time the person becomes susceptible to various opportunistic infections (OIs). At this stage, medical treatment and psycho-social support is needed. Access to prompt diagnosis and treatment of OIs ensures that PLHAs live longer and have a better quality of life.

Under NACP–II, focus was given on low-cost care, support and treatment of common OIs. Apart from further improving the availability, accessibility and affordability of ART treatment to the poor, NACP-III plans to strengthen family and community care through psycho-social support to the individuals, more particularly to the marginalised women and children affected by the epidemic, improve compliance of the prescribed ART regimen, and address stigma and discrimination associated with the epidemic.

To achieve this objective, 350 Community Care Centres are planned to be set up during the programme period (2007- 2012) in partnership with PLHA in high prevalence and moderate prevalence districts. These centres will be established based on the epidemiological profile and PLHA load of the districts, and linked to the nearest ART centre. The centres will provide counselling for drug adherence, nutritional needs, treatment support, referral and outreach for follow up, social support and legal services. State AIDS Prevention and Control Societies will ensure access of high risk groups to community care centres through linkages between TIs and the centres.

By strengthening local responses, NACP–III seeks high levels of drug adherence (>95 percent) and compliance of the prescribed ART regimen. This approach to care, support and treatment also creates awareness about the prevention of HIV infection and, thus, is a very significant part of NACP–III in achieving NACO's mission of containing and reversing HIV/AIDS incidence in India. The division focuses on Care and Support for children & Care and Support for Adults.

Approximately 50,000 children below 15 years are infected by HIV every year. So far, care and support response to these children was at a very minimal level. NACP–III plans to improve this through early diagnosis and treatment of HIV exposed children; comprehensive guidelines on paediatric HIV care for each level of the health system; special training to counsellors for counselling HIV positive children; linkages with social sector programmes for accessing social support for infected children; outreach and transportation subsidy to facilitate ART and follow up, nutritional, educational, recreational and skill development support, and by establishing and enforcing minimum standards of care and protection in institutional, foster care and community-based care systems.

1.3. Responsibilities Allotted:

Responsibilities of a Technical Officer-M& E (CST)

1. Strengthening M&E component in NACP-III

- Assist in development of operational M&E plans and operational guidelines.
- Assist in preparation of periodic reports for dissemination
- Analysis of data by state and components, working out the analysis frameworks and preparation of quarterly reports.
- Field visits to monitor M&E related activities in the allotted States and on sight verification
- Establish the system of monitoring the fund utilization in relation to physical progress
- Coordination with SACS, Development Partners, training institutions, NGOs and Private Sector

2. Support Monitoring the Program for improved effectiveness and improve the quality and use of the information and improved reporting

- Compile data, analyze and prepare status reports & executive summaries for dissemination/ action/ feedback
- Flagging the reporting issues and communicating to corresponding State SIM units for follow-up
- Performing the quality checks on the data received from states, highlight quality issues and follow up with states for compliance
- Conduct desk research in the area of respective programme division
- Develop system of compilation of data outside CMIS for information needed from time to time.

3. Assist in Organization of capacity building for M&E as per the plan

- Assist in organizing training of M&E staff at State, District and facility level
- Flagging the issues and need for capacity building and assisting in organization of training and general communication.
- Any other work assigned by the Programme Officer.

Tasks Performed

1) Assist in development of operational M&E plans and operational guidelines. Preparation of Checklist for assessing the performance of key indicators.

2) Support Monitoring the Program for improved effectiveness and improve the quality and use of the information and improved reporting. (preparation of monthly reports)

3) Assisting in development of a planned system of collecting, processing, storing, and disseminating data in the form of information needed to carry out the functions of management.(Strengthening the CMIS,) encourage and support the staff to access this service interface.

4) Assist in capacity building and training to develop skilled human recourse at State, District and facility level.

5) Assisting in monitoring of fund utilization in relation to physical progress and human resource.

6) Assist in development of smartcard system.

1.4. Learning in 3 months-

1. Data Analysis
2. Uploading of data at server
3. Performing of UAT
4. Procurement of hard wares
5. Website maintenance
6. Providing basic support to ART centre
7. Availability to software
8. Generating CMIS code
9. Proficiency in Ms Excel.

II. DISSERTATION REPORT

2.1. Introduction

Background:

National AIDS Control Organization is a division of the Ministry of Health and Family Welfare that provides leadership to HIV/AIDS Control Program in India through 35 HIV/AIDS Prevention and Control Societies representing respective States & Union Territories.

During NACP-III, NACO continues to work on the decentralized model evolved during NACP-II. Under NACP-III, the capacity of NACO has further strengthened for coordinating with the large number of partners within and outside the government, laying down and enforcing technical protocols and operational guidelines on the interventions to be undertaken, ensuring quality and assisting SACS to build its technical capacity for managing the programme implementation based on evidence.

NACO, as an integral constituent of the Ministry of Health & Family Welfare, is responsible for the implementation of the National Policy on HIV/AIDS and directly accountable to the National Council for AIDS (NCA) and National AIDS Control Board (NACB).
The overall goals of NACP-III is to halt and reverse the epidemic in India over the next five years by integrating programmes for prevention, care, support and treatment. This will be achieved through a four-pronged strategy:

Prevent infections through saturation of coverage of high-risk groups with targeted interventions (TIs) and scaled up interventions in the general population.

Provide greater care, support and treatment to larger number of PLHA.

Strengthen the infrastructure, systems and human resources in prevention, care, support and treatment programmes at district, state and national levels.

Strengthen the nationwide Strategic Information Management System.

SACS role/ function: SACS are autonomous and decentralised. Each State AIDS Prevention and Control Society has a governing body, its highest policy-making structure, headed either by the minister in charge of health or the chief secretary. It has on board representatives from key government departments, the civil society, trade and industry, private health sector and PLHA networks, who meet twice a year. It approves new policy initiatives, annual plan and budget, appoints statutory auditors and accepts the annual audit report. For better financial and operational efficiency, administrative and financial powers are vested in the Executive Committee and the Programme Director.

Functions of SACS are:

- Medical and public health services;

- Communication and social sector services; and
- Administration, planning, coordination, monitoring and evaluation, finance and procurement.

[The Guidelines for ART Centres have been taken in totality from NACO ART Guidelines]

Introduction to ART:

Free drugs are being provided through ART Centers to people living with HIV/AIDS and some are availing private facilities. The NACP-III target was to scale up the ART mission to 250 centers by 2011-12 to provide free ART to 3, 00,000 adults and 40,000 children. The free ART initiative of the Government of India was launched on 1st April, 2004 at eight institutions in six high prevalent states and the National Capital Territory of Delhi. Since then, it is being scaled up in a phased manner. By March 2010, a total of 269 ART centers in 31 States and Union Territories are functional. More than 315640 patients are receiving free antiretroviral (ARV) drugs at these centers.

The plan to expand and scale up ART services in India includes

a) Identification of the institutions

b) Strengthening of laboratory infrastructure in the form of CD4 machine (or linkages)

c) Capacity building of faculty of the host institute, including the contractual staff by training on ART

d) Procurement of ARV and OI drugs

There is a need for establishing and maintaining a well set up and run national ART monitoring and surveillance (M & E) system that will provide accurate data and also assist in supervision of the programme. India has the capacity to scale up ART with

advantages that many other countries do not have. These include having an established domestic drug manufacturing base and the enviable pool of trained health professionals. However, the unprecedented challenges for programme management and service delivery must be candidly identified, and addressed in a systematic manner. A public health approach for the provision of ART implies that ART regimens should be standardised, easy to use and have minimal adverse affects. Scaling up ARV treatment also calls for early involvement of a range of stake-holders, including those with HIV and other community members.

Objectives of ART centers

*Keeping the above in mind, the **main objective** of Anti-retroviral Therapy (ART) is to provide comprehensive services to eligible persons with HIV/AIDS. The **specific objectives** of an ART center are to:*

i. Identify eligible persons with HIV/AIDS requiring ART through laboratory services

(HIV testing, CD4 Count and other required investigations)

ii. Provide free ARV drugs to eligible persons with HIV/AIDS continuously

iii. Provide counselling services before and during treatment for ensuring drug adherence

iv. Educate persons and escorts on nutritional requirements, hygiene and measures to prevent transmission of infection

v. Refer patients requiring specialised services or admission.

vi. Provide comprehensive package of services including condoms and prevention education

Functions of ART center:

PLHA should be given holistic care at ART centers. This is possible only if the team is committed and has a comprehensive understanding of the problem and care. Functions of ART center can be categorised as medical, psychological and social as indicated below:

Medical Functions:

To diagnose and treat Opportunistic Infections

- *To screen PLHA for eligibility to initiate ART*
- *To monitor patients on ART and manage side-effects, if any*
- *To provide in-patient care as and when required.*
- *To facilitate linkages between other service providers*
- *To facilitate easy access to specialist's care as necessary.*

Psychological Functions:

- *To provide psychological support to PLHA accessing the ART center*
- *To provide counselling for adherence to ARV drugs*
- *To educate PLHA on proper nutrition*
- *To advise for risk reduction behaviour including usage of condoms*

Social Functions:

- *To facilitate PLHA to access available resources provided by government and NGO agencies*

 To facilitate linkages between other service providers and patients, like educational help for the children and Income generation programmes

Eligibility Criteria for Setting-up ART centres:

The following criteria would be used to set-up ART centers in Government Sector, Public Sector Undertakings and Non-government organisations:

i. Prevalence of HIV infection in the State/ District (preference given to category "A' & 'B' districts) and estimated number of persons with HIV/AIDS

ii. Availability of existing ART services in the State/Region/District

iii. Services provided and human resources available in critical departments in the

Hospital (Medicine, Microbiology, Obstetrics & Gynaecology, Paediatrics, Dermatology / Venereology)

iv. Availability of adequate space for setting up ART center within the hospital area

v. Willingness to assign minimum one faculty from Departments of Medicine and Microbiology to support ART center on a daily basis

vi. Agreeing to follow NACP technical and operational guidelines prescribed by GOI

vii. Commitment to regularly furnish information on facilities, services and outcomes in prescribed formats to SACS and NACO.

Feasibility Assessment for ART centers:

A feasibility assessment team comprising of offcers from NACO, SACS and independent referees/ consultants would visit identifi ed sites before sanctions are issued for setting up new ART centers.

Preparedness of Institution:

Once an ART center has been sanctioned for a hospital, a 10 member ART team consisting of faculty members from the Departments of Medicine, Paediatrics, Obstetrics & Gynaecology and Dermatology (and/or Venereology) Surgery, TB chest, Microbiology, Community medicine, Psychiatry should be selected by the hospital. This team shall be headed by the Dean/Medical Superendant of the institution. This team shall ensure that all PLHA's attanding hospital is provided care without any stigma and discrimination. The ART Centre shall be headed by the Head of the Department of Medicine who will be Nodal Officer. The HOD Medicine can appoint a senior faculy member of same department as Nodal Officer. A team of 2-4 physicians, 1-2 TB chest specialist, 1-2 paedeatrician, 1-2 gynaecologist and 1-2 dermatologist and 1 community medicine specialist is then sent for a 4 day training at NACO identified training centre. This team is turn shall carry out training of other staff members in dept. of Medicine, TB-chest, Paediatrics, OB & GY, skin & VD & community medicine.

Medical Officers and other contractual staff appointed to the ART center will also undergo a 12 day job-oriented training at NACO identified ART training institutes.

Infrastructure

Location and Access to ART Center:

The ART center should be located ideally in the Medicine OPD. If this is not feasible, the hospital in consultation with the SACS should choose a place within the same campus which is accessible to patients and keeping in mind cross-referral to and from various departments. Signs depicting directions to the ART center should be clearly placed by the institution at strategic locations so that there is no difficulty in locating the center within the hospital. The boards for such marking may be created and put in place by the institution concerned or by the SACS for uniformity within a state.

Space for ART Center:

A minimum of 800 sq. ft. area is required for an ART center having on average 500 patients (i.e. 20/day) on roll. It should have adequate number of rooms each measuring at least ten feet by ten feet (10' x 10') for the following staff /services listed below:

a. Examination Room: for Medical Offi cers to examine the patients

b. Counselling Room: For individual, group and family counselling

c. Pharmacy: For stocking ARV & OI drugs with a window or counter for dispensing the drugs. The medicines should be stored in a manner that is safe from theft, direct sunlight, and exposure to moisture, rodents and other factors that could harm or destroy the drugs. There should also be a separate facility in the same room for storage of paediatric ARV preparations

d. Laboratory: For collection and storage of samples and carrying out tests by the lab.technician

e. Office Space: for registration, record keeping and data entry by Record Keeper cum Computer Operator (Data Manager)

f. Waiting Area: This should be of adequate area where patients and accompanying persons can wait and where group therapy/ counselling could also be conducted. Television and other audio-visual facilities may be installed here for educational purposes

g. Adequate space should be individually identified and provided for different ART

centers taking into consideration the need of the particular center. As NGO and peer support at the center itself has proved to be an asset to patients and to the hospital, space should also be provided for volunteers from these organisations. In case the institution does not have enough constructed area for ART Centre, but have vacant space, they will send a proposal to NACO for building an ART Centre with adequate space and facilities like waiting space,

drinking water and toilet facilities. The ART center should be kept neat and tidy and should maintain the highest standards of cleanliness and hygiene, have proper ventilation, lighting, electric supply and water supply for effectively carrying out examination, counselling, laboratory tests and record keeping, while helping to prevent the spread of nosocomial infections.

Furniture and general equipment:

The ART center should be furnished adequately but must have the following:

a. Tables, chairs and stools for staff and patients

b. Examination Table with curtains

c. Office shelves for supplies, records and stationery etc.

d. Appropriate furniture for computer and printer and office stationery

e. Secure Cupboards for storing patient records, ARV and other medicines, laboratory kits, consumables and other equipment. These cupboards should have locks to prevent theft of material and data

f. Drinking water and waste disposal systems These items can be procured from the contingency grant provided for the ART center.

Medical equipment and Accessories

A set of general medical equipment like a weighing balance, height measurement pole, blood pressure (BP) apparatus, stethoscope, ophthalmoscope, otoscope, torch or another suitable light source and knee hammer should be available for each medical officer at the ART center. These items may procured by the SACS. In addition, models and charts, demonstration and counselling aids, such as a penis model for condoms and pill boxes should also be made available at the center.

CD 4 machines:

Each ART center should have access to CD4 tests either directly or by a clear linkage mechanism for conducting regular uninterrupted CD4 counts at a designated center. The center must follow the instructions on collection and transport of samples (and not patients) from testing site to the identified site where the test is to be conducted. The reagents and other consumables needed for CD4 test would be procured by NACO and supplied to the centers. The machines should be utilised optimally to ensure that there is minimal waiting period for CD4 test. All those patients who are screened for ART or are on ART will have their CD4 count done free of cost to a maximum of two tests per year unless desired more frequently by the clinician. But if a patient desires to get it done more than twice a year, he shall have to pay Rs. 250 per additional test.

Computers and Audio –Visual Equipemnt:

All ART centers are provided funds for procurement of a desktop computer. This PC should conform to currently acceptable specifications and should include a reliable chipset, motherboard, at least 256 MB of RAM, at least 40 GB of hard disk space, a fifteen inch picture tube (CRT) colour monitor, a keyboard, optical scroll mouse, a DVD reader cum CD/ DVD writer, an appropriate cabinet with power supply, FDD, two to four USB ports, a UPS capable of giving necessary power back up of minimum 30 minutes and a built in modem. In addition, computer peripherals should include a laser printer (black and white), a scanner and a broadband (or other, if broadband is not available in the concerned town or city) Internet connection. Expenditure on Internet connection including recurring expenses can be incurred out of contingency grant provided to the ART center every year. For educational purpose, a TV with accessories may be procured and installed in the Group-Counselling Room/ Waiting Area. The CDs shall be provided by NACO/SACS.

Human Resources:

ART team:

The ART team should consist of trained faculty from the Department of Medicine and Departments commonly linked with care and support of PLHA

(Microbiology, Obstetrics & Gynaecology, Paediatrics, Dermatology, Venereology Surgery, TB Chest and Community Medicine. In addition, the team should also have dedicated staff sanctioned for the ART centers and appointed through redeployment or on contractual basis. In case of contractual appointments, an open advertisement followed by interview of eligible applicants should be undertaken to select the most suitable candidates.

The appointment of contractual staff should be done by the steering committee in the institution. This steering committee will interview, appoint the contractual staff, and renew the contract and approve the yearly increment. This committee can terminate the appointment if a situation arises for it.

The steering committee should be headed by the Head of the Institution, and the Nodal Officer ART shall be the Member Secretary. The appointing authority will be the Head of the Steering committee (the head of the institution). During the appointment of contractual staff, SACS representative should be invited as a special invitee. Attitude of candidates should be given due weight age in the selection process. Experienced, retired persons can also be re-appointed up to the age of 62 years. Contractual appointments should preferably be made for a period of 3 years to ensure continuity. For contractual staff an annual appraisal system based on PMDS has been devised based on which continuation should be decided.

Data Manager & their Job Responsibilities:

The Data Manager should be a graduate (preferably from commerce/ accounts background) with Diploma in Computer Applications (from a recognised institute or university) or 'O' Level course from DOEACC. She/he should also be trained by NACO in monitoring and evaluation (M & E) of the programme aimed to build the capacity of the person in recording data, preparing and sending reports and maintaining records properly. Following are specific tasks of Data Manager:

 Register patients in the ART centre and fill in the patient ID card, enter/transfer data in Pre-ART and ART enrolment registers and computer from registers and treatment cards when required (details are mentioned under record keeping)

 Prepare and send monthly report

 Prepare and send cohort reports under supervision of the Nodal Officer

 Assist in academic activities and undertaking analysis of data for special studies under supervision of the Nodal Officer of the ART centre.

 Maintain the accounts of the ART centre.

Pharmacist & their Job Responsibilities:

The pharmacist should be qualified and hold a degree or a diploma in pharmacy. This important member of the staff at the ART center is appointed after the center starts at least five hundred patients on ART. Till such a time that a pharmacist is posted, ARV drugs may be distributed by the nursing staff posted by the hospital in the ART center. The pharmacist should perform the following tasks:

 Dispense the drugs for OIs and ARV drugs

 Maintain the drug stock and drug dispensing registers

 Ensure that the center has stock of ARV drugs for at least 3 months

 Inform the ART Nodal Officer of the center as and when the stock falls below the 3 month backup stock

 Ensure adequate stock of drugs required for treatment and prophylaxis of OIs

 Advise the patients and family about importance of adherence during each visit

 Advise the patient on possible drug toxicities and reporting of the same if significant

 Maintain a monthly sheet for expiry of drug stock.

 Do Pill count and report any adverse effects of drugs or any OIs.

Counsellor their Job Responsibilities:

The counselor at the ART center should hold a masters degree in social work (preferably specialised in psychiatric social work) or in psychology and should also be trained by NACO at one of the designated training centers. Qualifi ed and competent PLHA, if available, should be given preference while appointing a counselor. The candidate would undergo a 2-week training programme in counselling at a designated training institution. Alternatively, a qualifi ed Graduate Nurse in service can be redeployed, or a retired nurse can be appointed on contract against the post of Counselor. In both these situations, the Counselor Nurse would take up a one-month training programme on counselling in designated training institutions in the country. The counselor plays a very important role as a member of ART team and his/her responsibilities are crucial for the success of the programme and improved outcomes of the patients. The counsellor deals with the following:

 Disclosure to the family of the HIV+ persons

 Address issues of stigma and discrimination and rights of PLHA

 Address issues related to ARV treatment.

These should include:

 Pre ART or treatment readiness exercises, encourages and helps in finding guardian support

 Explains the details of treatment and its importance, side effects of the ARV drugs and limitations of ART (e.g. issues concerning failure of first line therapy and lack of options for HIV 2 infection at present)

 Adherence counselling and monitoring, identification of barriers to adherence and suggestions (remedies) to remove these barriers. The councellor should do pill countinueing for PLHAS on ART.

 Formula for calculating adherence of a Patient on ART in as below:

*Adherence of a paient for a particular time period = The extent/ proporation/ fraction/ percentage by which the patient adhered (sticked to) the treatment regimen during that particular time period = (no. of tablets/doses **actually taken** by a patinet for a particular time period) ÷ (no. of tablets/doses the paint **should have taken** during this same time period) x100*

 Provide emotional, social, and psychological support to patients and/or direct the patient to the concerned person or organisation that can do so.

 Direct patients to linked or referred centers and departments and assist in palliative and home-based care

 Repeatedly stress on positive living, prevention and condom use and dispense condoms

 Complete the required sections in the recording and reporting tools kept by the ART center (details are mentioned separately).

Standard Operating Procedures (SOP)

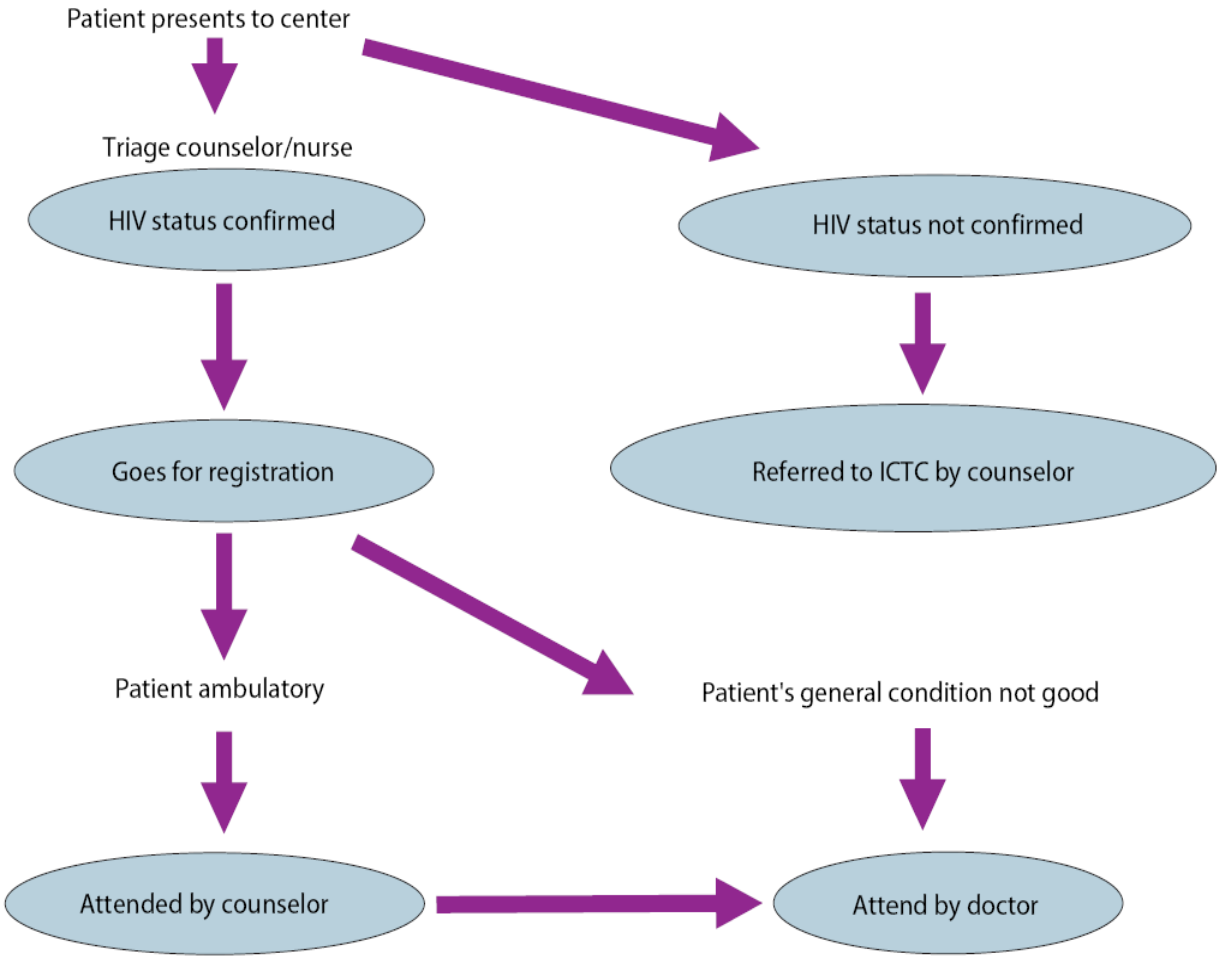
The SOP addresses the detailed process of patient flow as well as serves as a source of instructions to the staff of ART center that will optimally lead to good quality service delivery of ART, following the national guidelines. SOP is required for each of the following:

 Entry of patient into the care

 Flow of patient in the centre

 Referral system for the patients.

Flow of Patient at ART centre:



2.1.1. Patients flow at ART centre

Role of CMIS:

SACS societies supervised and inform NACO on target and achievements in various program components from the respective states from various service delivery units such as Blood Banks, Integrated Counseling and Testing centres, STI/RTI Clinics, ART Centres from NGO's implementing targeted interventions and Community Care Centres. From each service delivery units, the data have been reported through comprehensive software Computerized Management Information System (CMIS) which is installed in all State AIDS Control Societies and linked to NACO. It is an important source of data which gives early

warning on non-performances and issues. This routine data provides a wealth of information for day to day planning and management decisions for making program more effective.

The information is collected from these centres on monthly basis through CMIS and compiled to generate data that is used to keep a track on number of patients who are on ART(includes patients ever registered at ART centres, ever started treatment, alive and on ART, reported deaths). At each ART centre the data manager record data, prepare and send reports and maintains records and accounts properly of ART centre. This information generated is useful and utilized for monitoring and evaluation of these ART centres.

Rationale of the study:

This study focuses on gathering information about the knowledge level, facilities available, training, supervision of data managers, Pharmacists, counselors. It would help the policy makers to know the satisfaction level of these managers with the current facilities, formats, training and the system. This would in a way be as a feedback which would be useful in better programme management, strategy refinements and problem solving. The data is a tool for monitoring and evaluation of this information system. The study would come out with areas that need further planning and supervision. It would also reflect some areas which are loop holes if any and suggest some suggestions.

Objectives of the study:

A prospective study is under taken to accomplish following key objectives:-

1) To know the knowledge of key respondent about the existing reporting system in the ART center.
2) To understand the kind of problems faced by them.
3) To understand how are they managing these problems?
4) To know the level of awareness regarding various indicators in the reporting formats.
5) To encourage them to give key suggestions to improve the current existing reporting/monitoring system.

Literature Review:

As revealed in recent study from Ethiopia the 101 public ART hospitals treated 44,446 patients and the 91 ART health centers treated 1,599 patients in December 2006. The study found stronger relationship with urban than total zonal populations ($p < 0.001$ versus $p = 0.014$) and the positive correlation between distance from 44 health centers to the nearest ART hospital and patients receiving treatment at these health centers may be due to a combination of differential accessibility of ART sites, patient knowledge and health-seeking behaviour. [1]Another report about the Success with antiretroviral treatment for children in Kigali, Rwanda revealed that providing ARVs to children in a health center/nurse-based program is both feasible and very effective. Adequate numbers and training of nursing staff and an emphasis on the psychosocial needs of caregivers and children have been key elements for the successful scaling-up of ARVs at this level of the health system[2]. Another

study on systematic review was conducted comparing antiretroviral adherence descriptive and intervention studies conducted in the USA. Less discernible in the reports of intervention studies was specific attention to other factors prominent in the descriptive studies, which may be due to the complex nature of the problem, individualistic and rationalist slant of interventions, or simply the ways interventions were presented. Our review raises issues about niche standardization and intervention tailoring, targeting, and fidelity[3]. One another study on The "ART" of linkage: pre-treatment loss to care after HIV diagnosis at two PEPFAR sites in Durban, South Africa revealed that nearly half of HIV-infected persons at two high prevalence sites in Durban, South Africa, failed to have CD4 counts following HIV diagnosis. These high rates of pre-treatment loss to care highlight the urgent need to improve rates of linkage to HIV care after an initial positive HIV test.[4] Another systematic review of task shifting for HIV treatment and care in Africa stated that main challenges to implementation include adequate and sustainable training, support and pay for staff in new roles, the integration of new members into healthcare teams, and the compliance of regulatory bodies. Task shifting should be considered for careful implementation where HRH shortages threaten rollout programmes.[5] A study on Effectiveness of multidrug antiretroviral regimens to prevent mother-to-child transmission of HIV-1 in routine public health services in Cameroon revealed that Multidrug ARV regimens for PMTCT are feasible and effective in routine reference hospital. Early initiation of ARV during pregnancy and proper obstetrical care are essential to improve PMTCT.[6]

Sr. no.	Article	Type of study	Author	Place	Methods	Results
1	Utilization of antiretroviral treatment in Ethiopia between February and December 2006: spatial, temporal, and demographic patterns	Systematic review	Khoos et al. 2007[1]	Ethiopia	Secondary data	The sharp increase in ART uptake in 2006 is largely due to the rapid increase in the provision of free treatment at more sites.
2	Success with antiretroviral treatment for children in Kigali, Rwanda: experience with health center/nurse-based care.	Prospective	van Griensven et al. 2008 [2]	Rawanda	Program treatment and outcome data were reported from two government-run health centers, After that Interviews were held with health center staff and MSF program records were reviewed to	This report suggests that providing ARVs to

					describe the organization of the program. Important aspects included adequate training and supervision of nurses to manage ARV treatment.	children in a health center/nurse-based program is both feasible and very effective.
3	A systematic review comparing antiretroviral adherence descriptive and intervention studies conducted in the USA.	Systematic Review	Sandelowski et al.2009 [3]	U.S.A	Secondary data	It focus on other factors prominent in descriptive study which may be due to complexities of the problem
4.	The "ART" of linkage: pre-treatment loss to care after HIV diagnosis at two PEPFAR sites in Durban, South Africa	Prospective Study	Losina E et al 2010 [4]	South Africa	Defined PTLC as failure to have a CD4 count within 8 weeks of HIV diagnosis ,after that performed multivariate analysis to identify factors associated with PTLC	Nearly half of HIV-infected persons at two high prevalence sites in Durban, South Africa, failed to have CD4 counts following HIV diagnosis
5.	A systematic review of task shifting for HIV treatment and care in Africa	Systematic Review	Callaghan M et al.2010 [5]	Africa	Secondary data	The main challenges to implementation include adequate and sustainable training, support

						and pay for staff in new roles, the integration of new members into healthcare teams, and the compliance of regulatory bodies
6.	Effectiveness of multidrug antiretroviral regimens to prevent mother-to-child transmission of HIV-1 in routine public health services in Cameroon	Retrospective Cohort Study	Tchendjou P et al.2010 [6]	Cameroon	The study compared HIV-positive pregnant women with CD4 < or = 350 cells/mm on HAART [regimen 1] versus women on ARV prophylaxis and a regimen containing nevirapine or ziduvidine/lamuvidine and nevirapine [regimen 2] versus ziduvidine and lamuvidine plus nevirapine [regimen 3] versus nevirapine during labour if gestational age was > or = 37 weeks.[regimen 4]. Infants were administered sd-NVP plus ZDV and 3TC for 7 days or 30 days. Early diagnosis (6-10 weeks) was done using b-DNA followed by RT-PCR	Multidrug ARV regimens for PMTCT are feasible and effective in routine reference hospital. Early initiation of ARV during pregnancy and proper obstetrical care are essential to improve PMTCT

2.1.1. Literature Review

2.2. Methodology:

The current study is a prospective study; it aims to do a facility assessment as ART centers in New Delhi. The study consisted of random selection of ART centers, in-depth personal interviews with data manager, pharmacists and counselors.

Study Subject:-

At present 269 Art centers are currently are currently functional in the country. ART centers collect data compile and send reports monthly through CMIS. The current analysis is to know the present situation, understanding, problem faced and possible suggestion. All the respondents were interviewed to assess their awareness on the basis of 10 previously selected indicators which are also a part of monthly reporting format.

A total of 12 people were interviewed at 4 ART centers in Delhi. For this 4 data managers, 4 pharmacists and 4 counselors were interviewed.

2.3. Results & Findings:

A total of 4 ART centres were covered out of 8 in Delhi, 12 respondents were interviewed with the help of a pre-decided questionnaire to assess their awareness on the basis of 10 previously selected indicators which are also a part of monthly reporting format, to gather information about the knowledge level, facilities available, training, supervision of data managers, Pharmacists, counselors. The analysis revealed that the level of awareness regarding the monthly format is highest among the data managers: 75% of data managers have very good awareness regarding the format, 25% have good awareness regarding the format. The level of information was least in Pharmacist 75% have poor while 25% have very poor awareness. 50% of counselors possess average awareness while 25% possessed good and 25% have very poor awareness.

If we look at the status of training we can see that 50% were trained or received any training before job among all respondents. 100% of counselors were trained before joining while 50% of data managers received any kind of training before joining. While none of the pharmacist received any kind of training before joining. After joining 50% of data managers and 50% of counselors received training.

If we focus on the training requirement as told by the respondents an overall of 91% respondent felt the need for training. 100% of data managers felt the requirement of training, 50% among them said they need more knowledge regarding monthly reporting format while 50% regarding OI types and episodes. 100% counselors felt the need for training; most of them said that they would like to know how they can counsel pediatrics cases. 75% of Pharmacist said they want training regarding monthly formats.

If we concentrate on the level of awareness regarding the various indicators involved in formats for data reporting we can observe that-

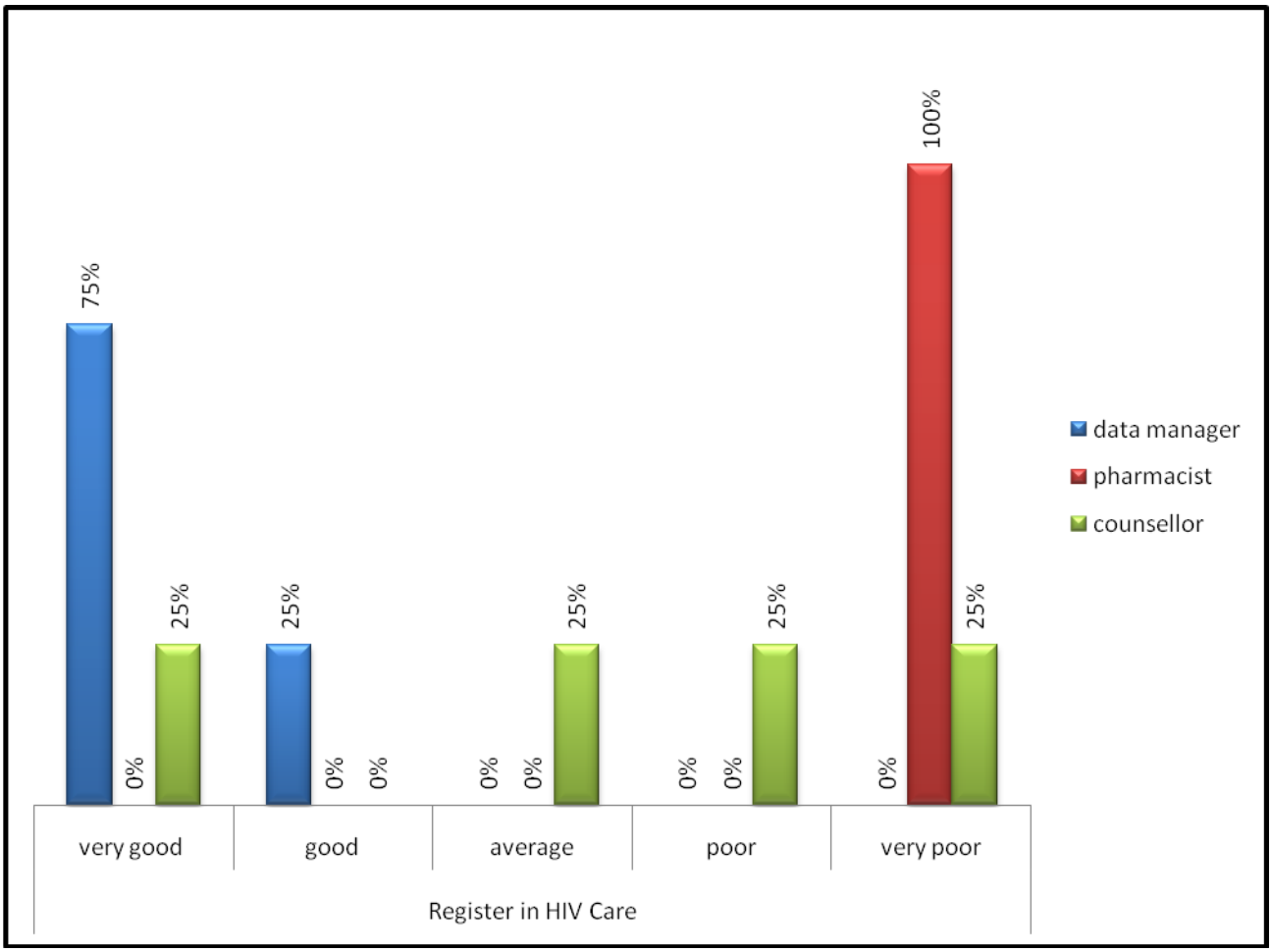


Figure. 2.2.1. Awareness level regarding Register in HIV Care

As seen in graph pharmacist have very poor knowledge regarding indicator 7 while data mangers possess the highest knowledge; 75% have very good knowledge while 25% have good knowledge. Counsellor have varied knowledge levels, 25% have very good, 25% have average, 25% have poor and 25% have very poor awareness regarding Indicator 7.

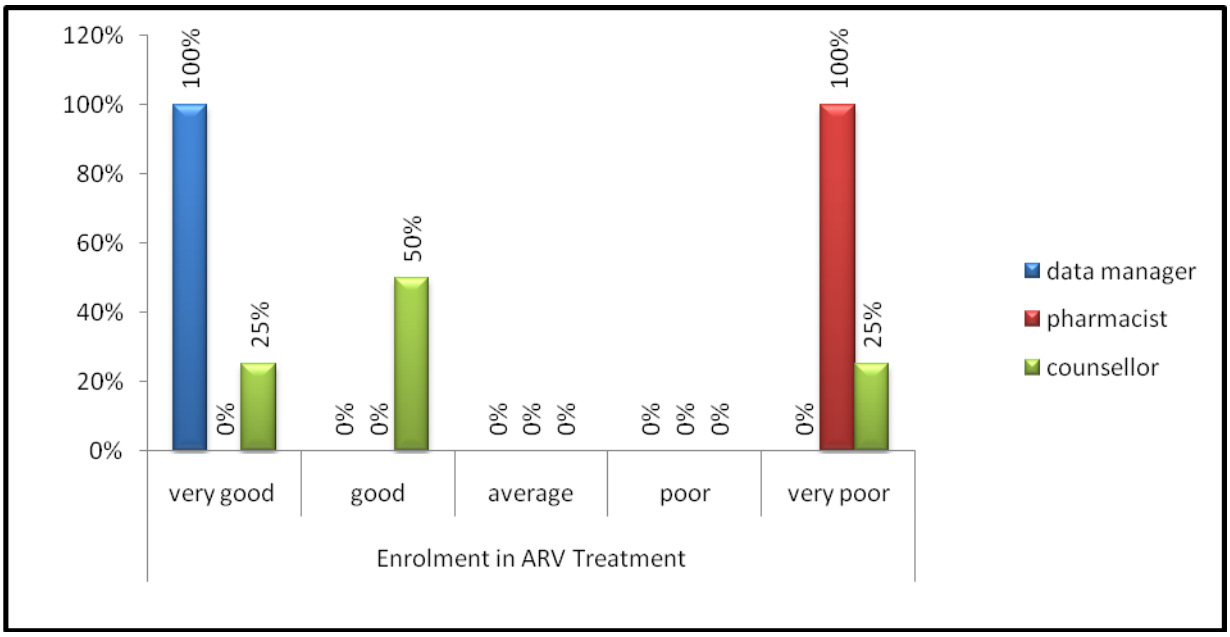


Figure 2.2.2. Awareness level regarding Enrolment in ARV Treatment

As far as indicator 8 is concerned data managers have highest level of awareness; 100% of data mangers were having very good information regading the enrolment in ARV treatment. None of the pharmacist possessed any awareness regarding this indicator. 50% of the counsellors have good awreness regarding indicator 8, 25% have very good and 25% have very poor awrenesss level regarding enrolment in ARV treatment.

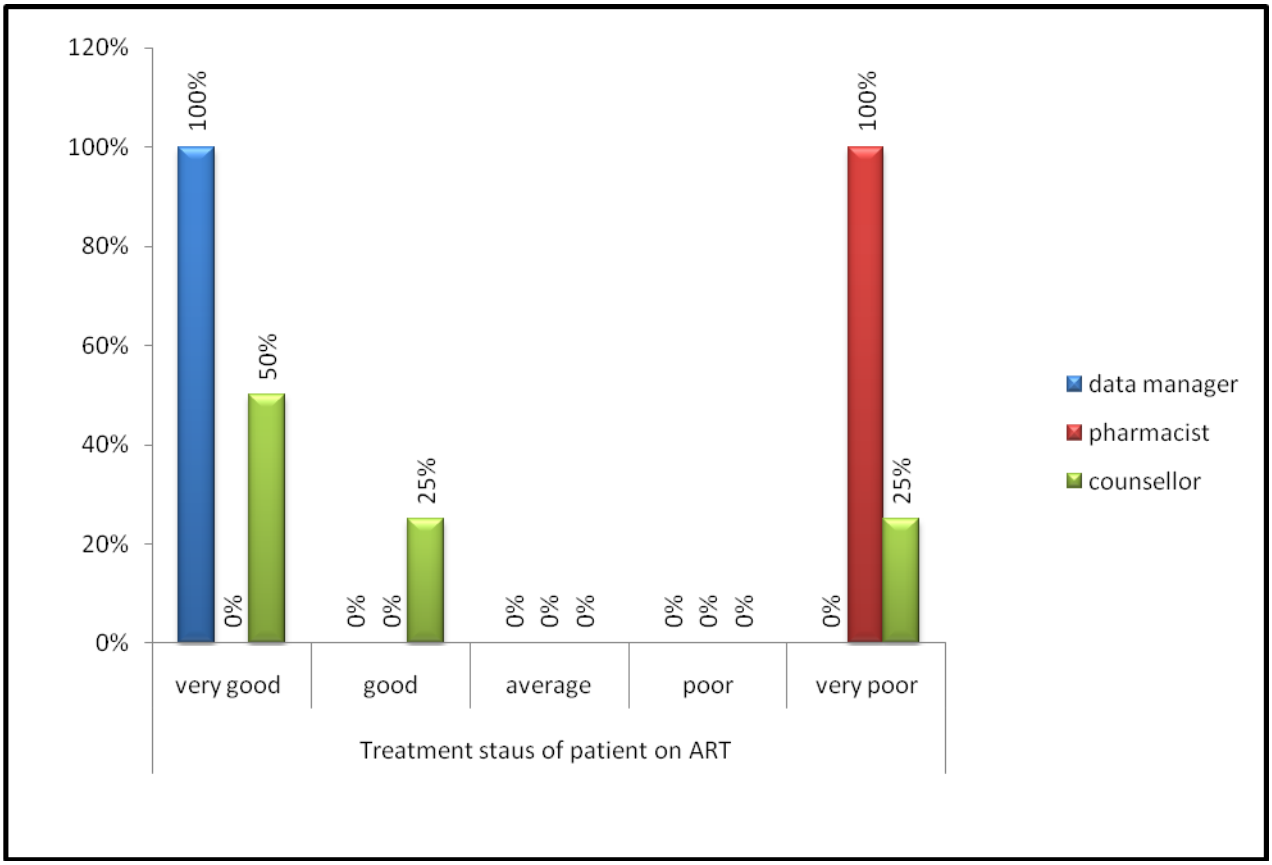


Figure.2.2.3. Awareness level regarding Treatment status of patient on ART

As seen from the graph data managers (100%) possessed the highest level of awareness regarding indicator 9 that is Treatment status of Patient on ART. 50% of counselors have very good, 25% have good and 25% have very poor level of awareness regarding indicator 9.The level of awareness regarding indicator 9 is least in Pharmacist, 100% of pharmacist have very poor awareness regarding this.

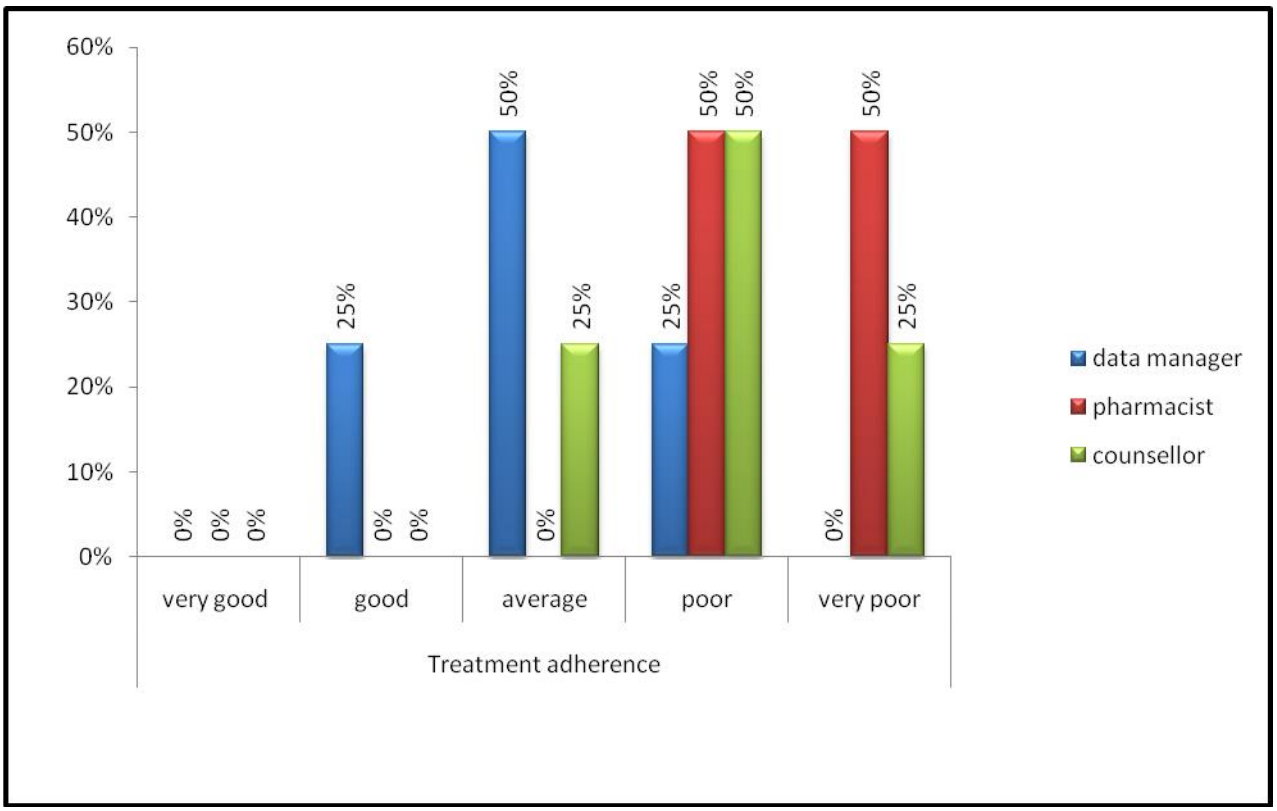


Figure. 2.2.4. Awareness level regarding Treatment Adherence

Indicator 10 in the reporting format is regarding Treatment adherence. 50% of data managers have average awareness, 50% of pharmacist have poor awareness, 50% of counsellors have very poor awareness, 50% of counsellors have poor awareness while 25% of counsellors have very poor awareness. 25% of data managers have average awareness 25% have good, 25% counsellors have average awareness regarding indicator 10.

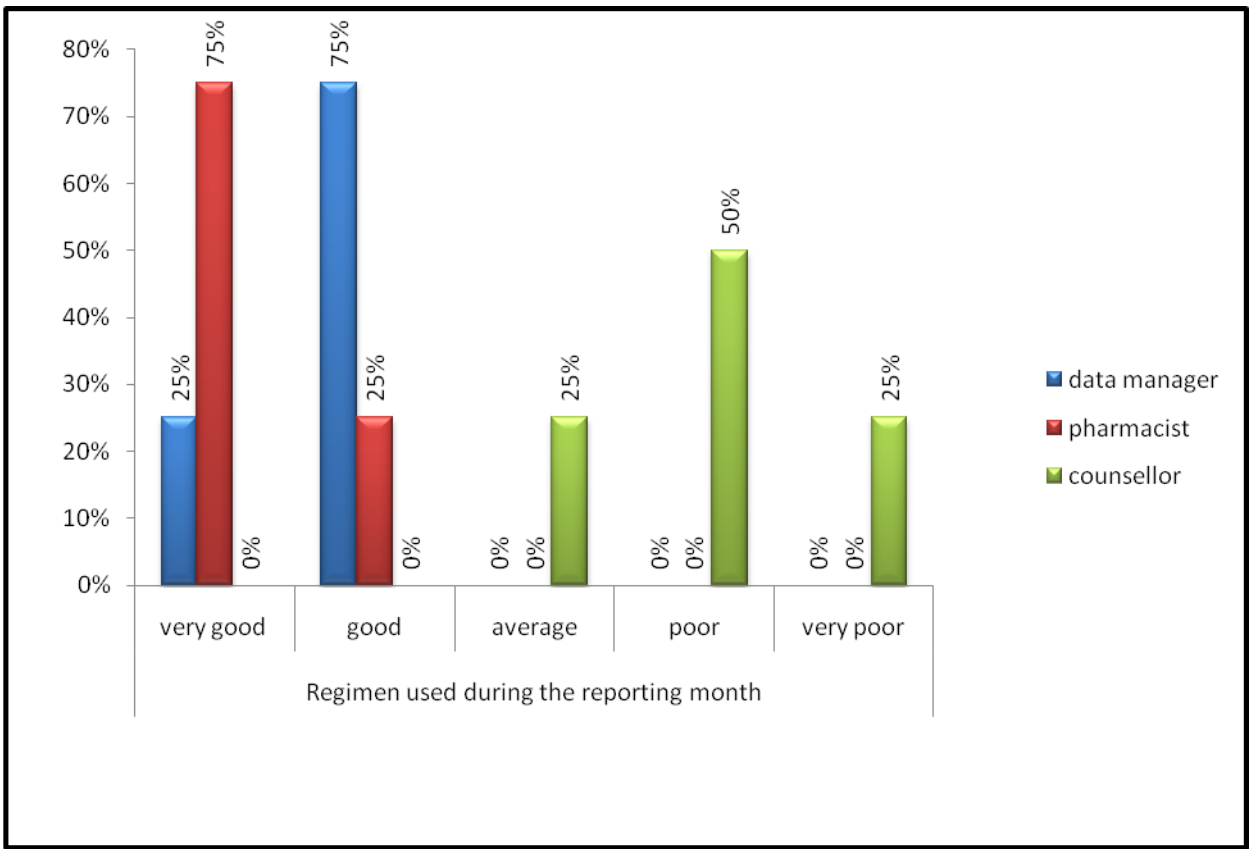


Figure. 2.2.5. Awareness level regarding Regimen used during the reporting format

As clear from the graph the awareness regarding Regimen used during the reporting month is very good in 75% of pharmacist, 25% of data managers; good in 75% of data managers, 25% in pharmacist; average in 25% of counsellors, poor in 50% counsellors and very poor in 25% counsellors.

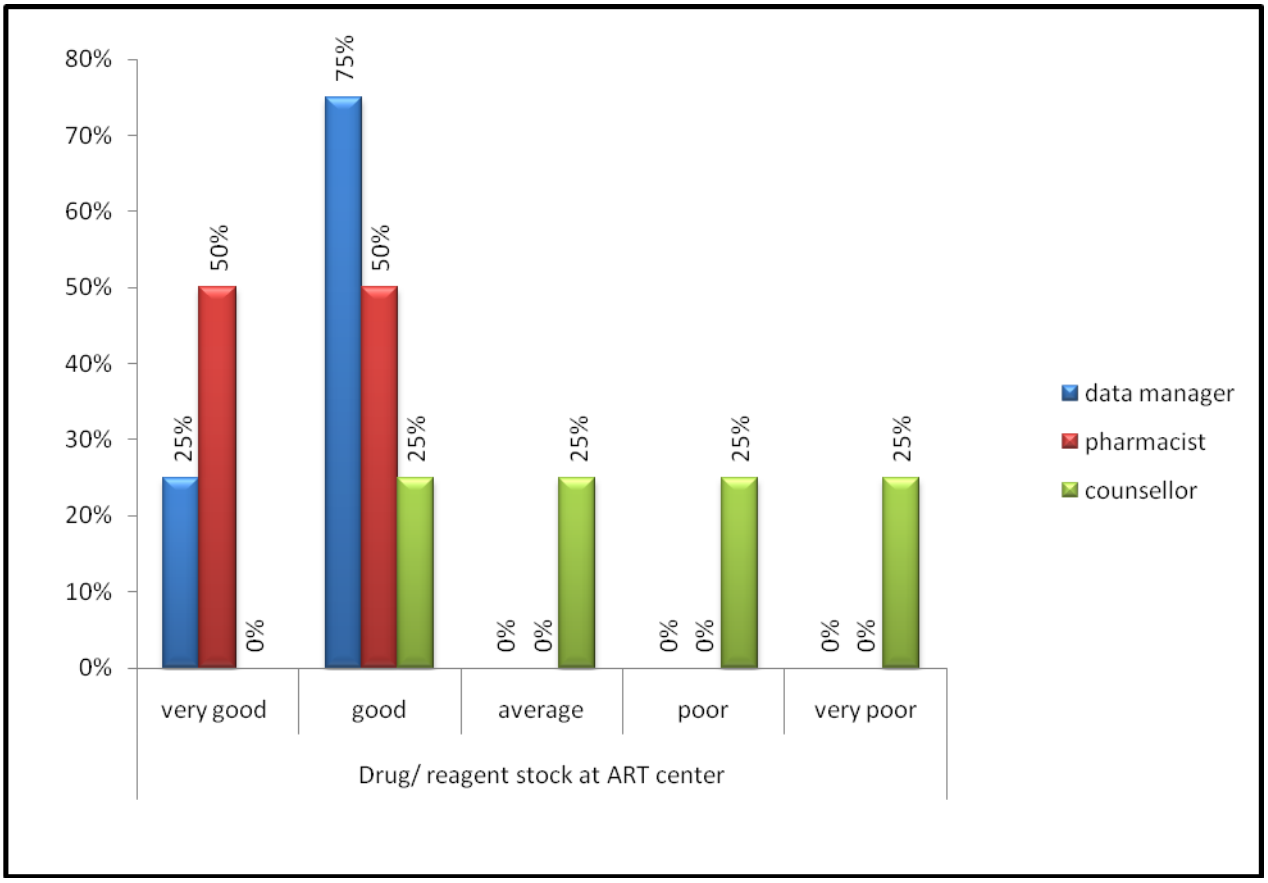


Figure. 2.2.6. Awareness level regarding Drug/ Reagent stock at ART centre

If we discuss about Indicator 12 in the reporting format that is Drug/reagent stock at ART centre we can observe that 75% have good awareness level regarding this indicator. 50% of pharmacist have good and 50% have very good awareness level. 25% of counsellors have good, 25% have average, 25% have poor, 25% have very poor awareness level reagrding Drug/Reagent stock at ART centre.

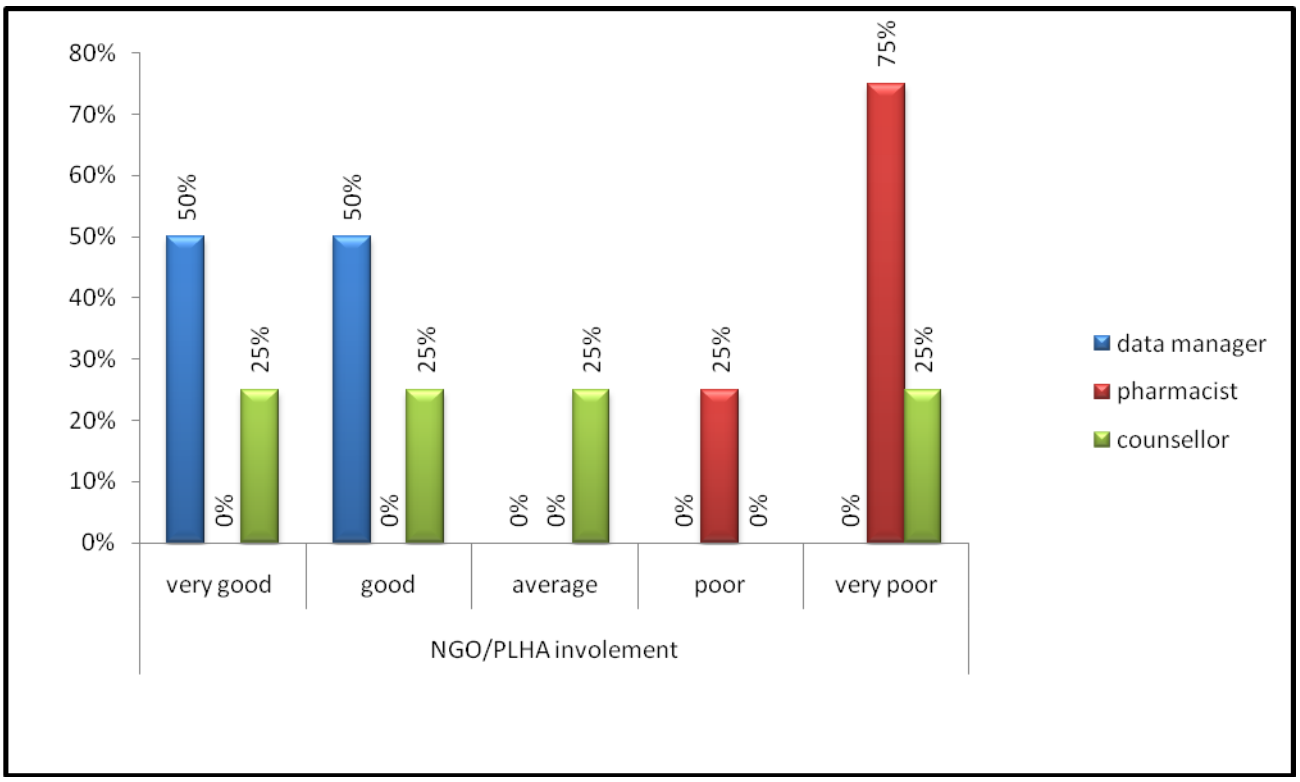


Figure. 2.2.7. Awareness level regarding NGO/PLHA involvement

NGO/PLHA INVOLVEMENT is indicator 13 in the format. The awareness level regarding this indicator is very good in 50% of data managers, 25% of counsellors; good in 50% of data managers, 25% of counsellors; average in 25% of counsellors; poor in 25% of pharmacists and very poor in 75% of pharmacists and 25% of counsellors.

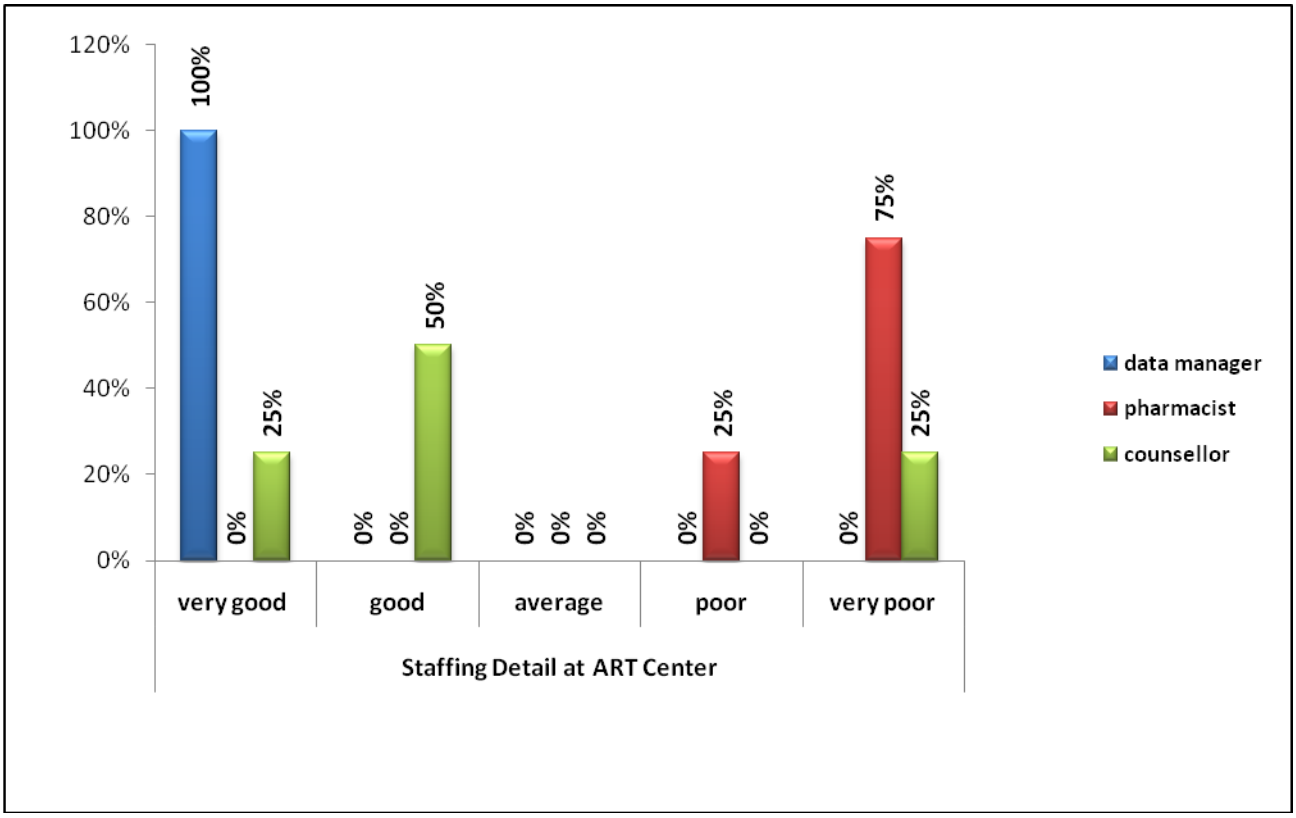


Figure. 2.2.8. Awareness level regarding Staffing details at ART centre

100% of data managers have very good awareness regarding this indicator. Very good level of awareness is also amongst 25% of counsellors, good in 50% ofcounsellors, poor in 25% of Pharmacists, very poor in 75% of Pharmacists and 25% of counsellors.

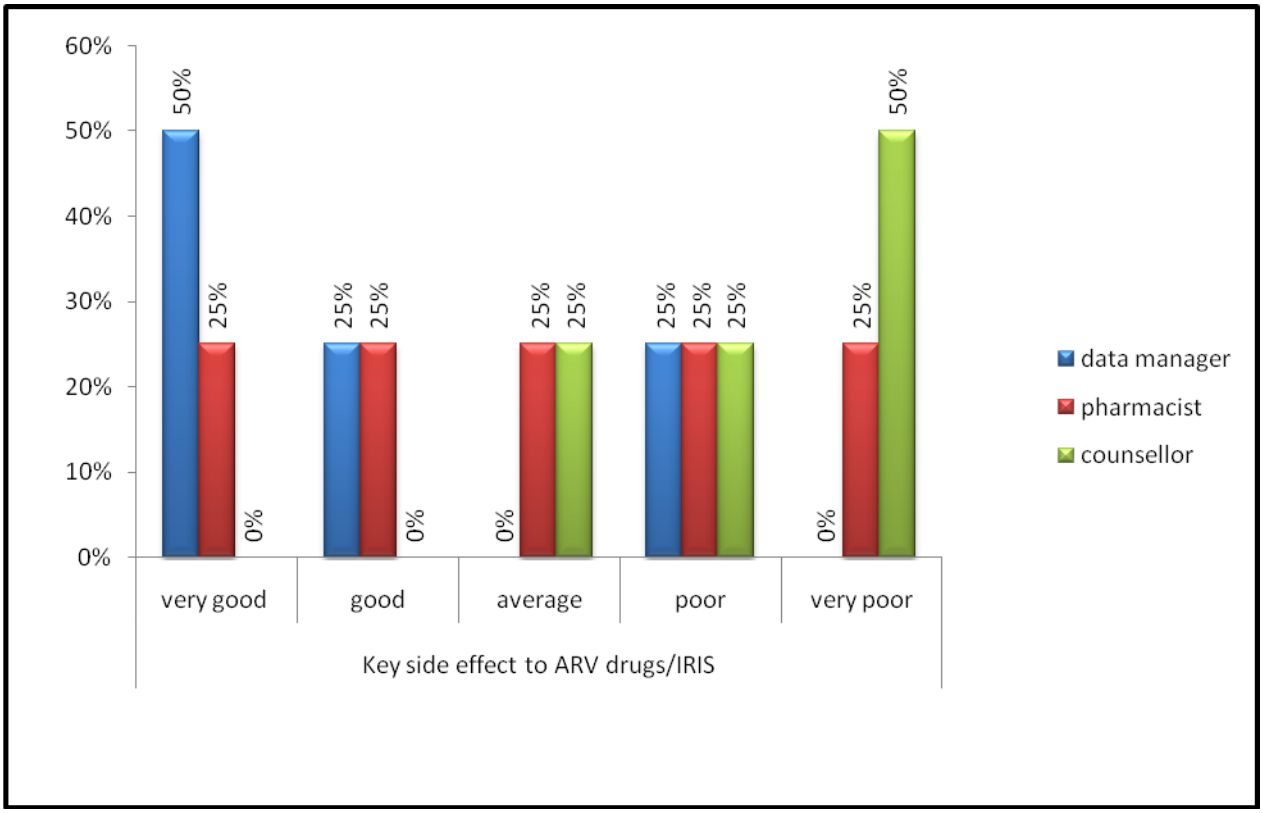


Figure. 2.2.9. Awareness level regarding Key side-effects to ARV drugs/IRIS

If we talk about Indicator 15(key side effects to ARV drugs/IRIS) very good level of awareness is amongst 50% of data managers, 25% of pharmacists; good level of awareness in 25% of data managers, 25% in pharmacists; average in 25% of pharmacists, 25% of counsellors; poor in 25% counsellors, 25% of data managers, 25% of pharmacists; very poor in 50% of counsellors, 25% of pharmacists.

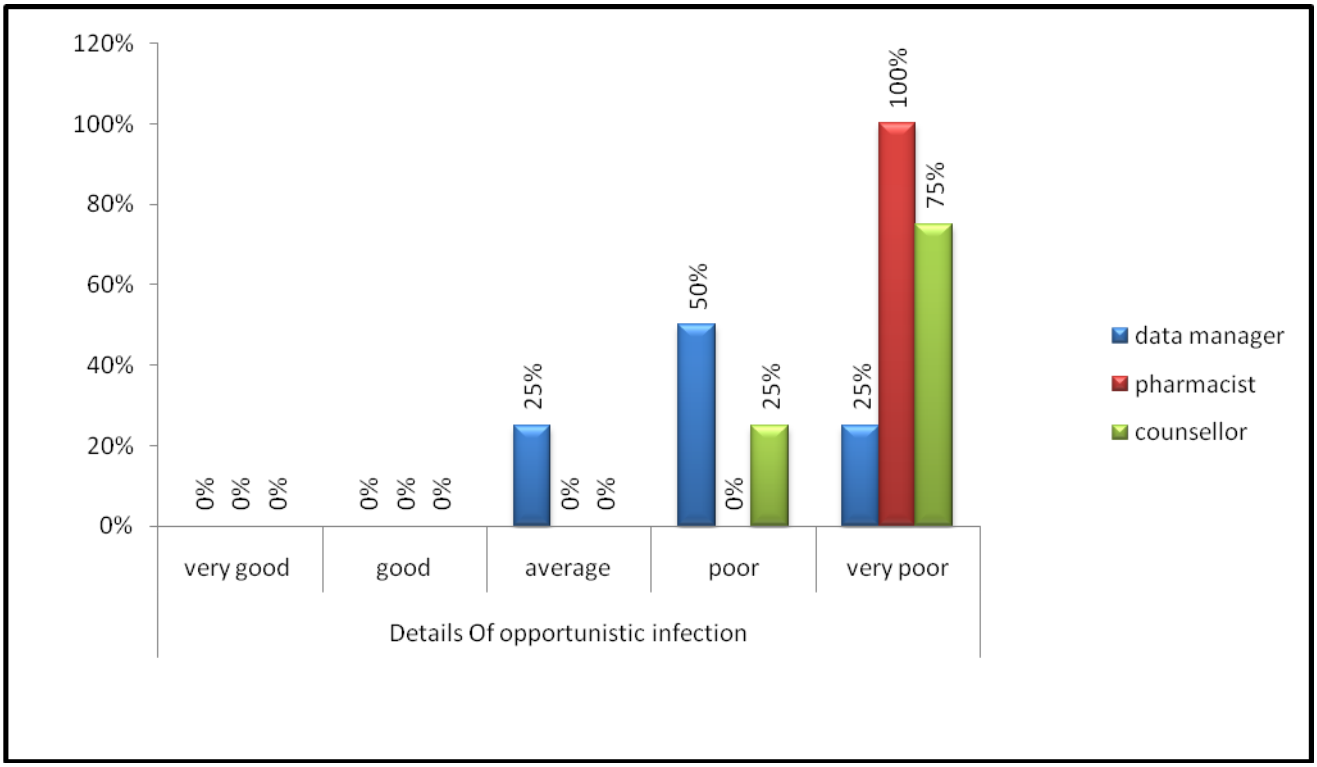


Figure. 2.2.10. Awareness level regarding details of opportunistics infections

Awareness regarding Details of opportunistic infections neither very good nor good in any of the respondents; average in 25% of data managers; poor in 50% of data managers, 25% of counsellors; and very poor in 100% of pharmacists, 75% of counsellors and 25% of data managers.

Other findings:

- 50% of data managers said that the duration of training period is very long and exhaustive. It should be small and in form of short sessions.
- 25% of data managers felt that their should be pre & post traing test to assess the level of understanding during the session.
- 25% of the data managers felt that their sholud be continuous feedback system of the training.
- Most of the respondent felt that there should be more data filtering option in reporting format.
- Some of the ART centre need good supply of patient registration card.
- Basic training should be given to all the staff.

The following were the problems that were revealed as a result of this assessment survey:

- PIDs are different in case of ART, Pre-ART, Transfer In Patients
- In case patient is transferred from other ART centre and he is On ART than both Pre-ART and On ART numbers has to be entered in PLHA software and these numbers are again generated at recieving centre.
- There is no automation over the type of patent change against age, for example if a patient comes as a child of 14 years age and continues with ART treatment, after two years of continuous treatment software doesn't automatically changes the patient to adult patient.
- Format of dates throughout the software is not common. On most of the forms it is input as text so no sorting is provided overthose screens (especially over follows up screens).
- Adherence does not calculate automatically by the softwares as there is complexity in regimen selection process.
- Gender based validations are missing in follows up screens i.e., column 16 should be blocked in case of males and TG patients.
- Photos are not taken at very same time when patient comes to the centre for the first as the data manager gets the card of the patient for entries after the complete ART process cycle. So instead of taking photos from the Webcam there should be the facility of uploading the scanned photos of the patient.
- RNTCP/DOTS selection can not be updated.
- By this software we cannot generate any reports like 'Daily due list', 'MIS Patients', 'LFU Patient' etc with their name, addresses, and contact details.
- List generated by the software by the software should at least have patients "name, address, contact information".
- If any patient report of more than one episode of opportunistic infection than that can't be recorded in this format.

2.4. Conclusion & Recommendation:

Their has been rapid scaling up of Anti-retroviral treatment (ART) services in India during the last 4 years. 269 ART centres are providing treatments to over 3.15 lakh persons Living with HIV/AIDS in the country. The current study focused on gathering information about the knowledge level, facilities available, training, supervision of data managers, Pharmacists, counselors. It would help the policy makers to know the satisfaction level of these managers with the current facilities, formats, training and the system. The study covered 4 ART centers out of 9 in Delhi. The data was collected after the in-depth interviews of data managers, pharmacists & counselors in these centres. In the present study we tried to find out the awareness level of the staff (selected) regarding monthly format. The study revealed that the data managers have the highest awareness and the pharmacists have least awareness and it also highlights the requirement for their training regarding the format as only half of the respondents ever received any training before joining. There is no provision of training of pharmacists. During the study 91% of the respondents felt the need for training. The areas which are suggested by most of the training as issues requiring training are reporting format itself and reporting OI types and episodes. Counseling Pediatric cases is a challenge for counselors and they require training in this respect. The awareness regarding registration in HIV care, Enrolment in ARV treatment, Treatment Status of patient on ART is highest in data managers and lowest in pharmacists. While the awareness regarding other indicators taken such as Treatment adherence, Regimen used during the reporting month, Drug/ reagent stock at ART center, NGO/PLHA involement, Staffing Detail at ARTCenter, Key side effect to ARV drugs/IRIS, Details Of opportunistic infection varies highly from respondent to respondent. On the basis of this study it is revealed that there is immediate importance & requirement of training for the staff, but the training should be in small sessions. It would be more useful if the reporting format is simpler. There should be multiple choice options also for some questions in the format. Instead of taking photos from the Webcam there should be the facility of uploading the scanned photos of the patient as an option. There should be a pre & post training test for the participants for assessing the level of understanding and improvement in training programmes. There should be review system for training programmes. There should be more filters available in the reporting format in order to make it possible to generate more specific reports. A special training is required for counsellor for handling pediatric and phsychiatric patients. More attention is needed to ensure proper supply of cards for the patients. Some paerts in the reporting format require more space in form of columns in order to enter the data in a better way. Better supervision of the staff by the supervisor is also recommended.

References

Computerized Information Management System (CMIS) of NACO

NACO , Programme Implementation Plan (PIP), NACP- III

Desclaux A. Equality in access to AIDS treatment in Africa: Pitfalls among achievements. In : Castro A, Singer M eds. Unhealthy Health Policy: A critical anthropological examination Walnut Creek (California): Altamira Press 408p

Laniece I, Diop K, Desclaux A, Sow K, Ciss B, et.al. Determinants of adherence among adults receiving antiretroviral drugs in Senegal (ANRS 1215 Cohort study). Antivir Ther 2003; 8: S501- S502

Nwokike JI. Baseline data and predictors of adherence to antiretroviral drugs in Maun General hospital (MGH)

Weiser S, Wolfe W, Bangsberg D, Thior I, Gilbert P, et al. Barriers to antiretroviral adherence for patients living with HIV infection and AIDS in Botswana.

Sarna A, Pujari S, Sengar AK, Garg R, Gupta I, van Dam J. Adherence to antiretroviral therapy and its determinants amongst HIV patients in India

National Aids Control Organisation, Operational Guidelines for Link ART Center, 2008

Ruchi Sogarwal and Damodar Bachani Assessment of ART centres in India: Client's perspectives. Journal of Indian Medical Association, 2009

Trends in hospitalizations of HIV-infected children and adolescents in the United States: analysis of data from the 1994-2003 Nationwide Inpatient Sample.

Kourtis AP, Bansil P, Posner SF, Johnson C, Jamieson DJ.

Utilization of antiretroviral treatment in Ethiopia between February and December 2006: spatial, temporal, and demographic patterns, Kloos H, Assefa Y, Adugna A, Mulatu MS, Mariam DH.

Department of Epidemiology and Biostatistics, University of California, San Francisco Medical Center, San Francisco, CA, USA. helmutk@comcast.net

Success with antiretroviral treatment for children in Kigali, Rwanda: experience with health center/nurse-based care.

van Griensven J, De Naeyer L, Uwera J, Asiimwe A, Gazille C, Reid T.

Médecins Sans Frontières, Kigali, Rwanda. jvgrie@yahoo.com

A systematic review comparing antiretroviral adherence descriptive and intervention studies conducted in the USA.

Sandelowski M, Voils CI, Chang Y, Lee EJ.

School of Nursing, University of North Carolina at Chapel Hill, NC, USA. msandelo@email.unc.edu

CD4+ T-lymphocytes cell counts in adults with human immunodeficiency virus infection at the medical department of a tertiary health institution in Nigeria.

Ajayi AO, Ajayi EA, Fasakin KA.

Department of Medicine, Federal Medical Centre, PMB 201, Ido-Ekiti, Nigeria. dejiajayi2@yahoo.co.uk

The "ART" of linkage: pre-treatment loss to care after HIV diagnosis at two PEPFAR sites in Durban, South Africa.

Losina E, Bassett IV, Giddy J, Chetty S, Regan S, Walensky RP, Ross D, Scott CA, Uhler LM, Katz JN, Holst H, Freedberg KA.
Division of General Medicine, Massachusetts General Hospital, Boston, Massachusetts, United States of America. elosina@partners.org
Assessing the accessibility of HIV care packages among tuberculosis patients in the Northwest Region, Cameroon.
Njozing NB, Miguel SS, Tih PM, Hurtig AK.
St. Mary Soledad Catholic Hospital, Mankon, Bamenda, PO Box 157, Cameroon. njozing.barnabas@epiph.umu.se
Assessing the accessibility of HIV care packages among tuberculosis patients in the Northwest Region, Cameroon.
Njozing NB, Miguel SS, Tih PM, Hurtig AK.
St. Mary Soledad Catholic Hospital, Mankon, Bamenda, PO Box 157, Cameroon. njozing.barnabas@epiph.umu.se
A systematic review of task shifting for HIV treatment and care in Africa.
Callaghan M, Ford N, Schneider H.
Effectiveness of multidrug antiretroviral regimens to prevent mother-to-child transmission of HIV-1 in routine public health services in Cameroon.
Tchendjou P, Same-Ekobo C, Nga A, Tejiokem M, Kfutwah A, Nlend AN, Tsague L, Bissek AC, Ekoa D, Orne-Gliemann J, Rousset D, Pouillot R, Dabis F.
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