Ministry of Health and Social Services

Report of the ART Service Quality Assessments (SQA) 2014

Directorate of Special Programs:National HIV/AIDS and STI Control Program

10-30-2015

CONTENTS

LIST OF FIGURES

LIST OF ACRONYMNS

ART……Antiretroviral Therapy
BMI……Body Mass Index
CDC……US Centres for Disease Control and Prevention
CTX……Cotrimoxazole
DVC……Digital Video Conferencing
EDT………Electronic Dispensing Tool
ePMS……Electronic Patient Management System
EWI………Early Warning Indicator
GRN………Government of the Republic of Namibia
HIV……Human Immunodeficiency Virus
HIV DR……HIV Drug Resistance
HRSA……Health Resources and Services Administration
IPT……Isoniazid Preventive Therapy (IPT)
ITECH……International Training and Education Center for Health
LTFU……Lost To Follow Up
MOHSS……Ministry of Health and Social Services
MUAC………Mid Upper Arm Circumference
NIMART……… Nurse Initiated Management of Antiretroviral Therapy
NSF……National Strategic Framework for HIV/AIDS Response
OVC……Orphans and Vulnerable Children
PCB……Patient Care Booklet
PHDP……Positive Health Dignity and Prevention
PITC……Provider Initiated Testing and Counseling
SQA……Service Quality Assessment
TSSV……Technical Supervisory Support Visits
USAID……United States Agency for International Development
VL……Viral Load
WISN……Workload Indicators for Staffing Needs

EXECUTIVE SUMMARY

The Ministry of Health and Social Services (MOHSS) periodically conducts several different supervisory and survey activities designed to help identify the gaps and successes of program implementation at all sub-national levels. The MOHSS HIV Drug Resistance Surveillance 2014 Early Warning Indicator (EWI) Report identified several quality gaps of ART services. Of major concern were the gaps in Viral Load (VL) measurement and the suppression rates after treatment initiation. Supply chain interruptions were also identified in several sites as well as gaps in retention in care and treatment adherence. Many of these concerns were also partly identified during the MOHSS Technical Supervisory Support Visits (TSSV) 2013 Report. Furthermore consultations conducted during the 2013 National Strategic Framework for HIV/AIDS response (NSF) mid-term review as well as the development of the National ART Operational Plan 2014/15- 2016/17 identified similar concerns with quality gaps in some ART facilities. In order to develop a deeper understanding of the quality of ART services in several of Namibia's ART facilities, the MOHSS in collaboration with the US Centres for Disease Control and Prevention (CDC) conducted the ART Service Quality Assessments (SQA) in 14 facilities from 7 high HIV burden regions of Namibia during the month of December 2014.The main goal of the SQA was to conduct a standardized, in-depth assessment of ART clinical care provided at the sites with the following specific objectives:

i. Assess site processes that support quality of clinical care
ii. Assess adequacy of documentation of outcomes and processes
iii. Assess compliance and implementation of national guidelines
iv. Identify site barriers to providing high quality clinical care

A SQA is an in-depth assessment of service delivery quality for HIV treatment services against national programmatic standards. As such, it provides aggregate data and analysis to inform programmatic improvement in ART clinical services, it helps identify areas for further assessment and improvement and it can be used as an opportunity to build capacity for future site level service quality assessments.

The key findings from the SQA:
The assessment identified several key strengths in ART service delivery, among them-ongoing efforts to provide ART closer to patients through IMAI/NIMART and outreach clinics; strong provider understanding of patient follow up intervals; supply chain reliability as well as consistent prescription of adult and pediatric cotrimoxazole.

Overall the ePMS showed significantly incomplete documentation of lab results. The greatest disparity in documenting lab results was with Viral Load (VL) results. Only half of the patients who had a VL result recorded in the Patient Care Booklet (PCB), had the result also captured in the ePMS (72% vs 36% receptively). This potentially has significant implications in our capacity to accurately monitor VL outcomes (the last 90 in the 90:90:90) using ePMS data centrally.

In terms of meeting quality standards for key clinical domains, the assessment demonstrated major gaps in the following 6 domains: Pediatric ARV supply chain, Pediatric TB Screening, Routine Screening for HIV testing for children, Adolescent Support Services; Pediatric Facility Referral to Community Care and Support Services and Pediatric Growth Monitoring.

The review of facility level staffing data suggests rapid turnover of physicians and pharmacists in the ART sites with only about 30% of these cadres having served in the sites for more than 2 years. This is likely linked to the general shortage of these cadres across the hospital services such that many are

rotated from ART services to other divisions. Registered nurses provide some continuity in the sites with about 52% reporting having been at the sites for more than 2 years. Data clerks, lab technicians and lay counselors have the least turnover with majority having served the sites for 2-5 years or more. This data showing rapid turnover of physicians and pharmacists from ART sites but more stability among nurses and other cadres further supports the Government of the Republic of Namibia (GRN) strategy of scaling up Nurse Initiated Management of Antiretroviral Therapy (NIMART) which aims to build the capacity of registered nurses to initiate and manage ART patients.

In terms of VL monitoring key gaps were identified in pediatric VL testing showing <80% of patients had VL testing within 8-12 months of ART initiation. Similarly major gaps were identified in pediatric viral load suppression rates (<70%).Out of the total 116 pediatric patient charts reviewed ; only 50% had viral load measurement done within the recommended 6-9 months after ART initiation. Only 60% of those children who had VL measurement also showed suppression (<1000 copies/ml of blood).
The assessment also identified major challenges in supervisory support visit provided to ART sites and this can negatively influence quality of service delivery and staff motivation .50% of the sites reported either no supervisory visit from higher level within the past 3 months or visits that were not regular enough during the last 12 months. The critical benefit of regular site-level supportive supervision must be acknowledged in ART service and necessary logistic and financial commitment must be made to implement it accordingly.

Key Recommendations of the SQA:
Given the challenges of retention, difficulties faced by patients to travels to ART clinics at major hospitals and health centres, the MOHSS should continue rapidly scaling up NIMART; a strategy which empowers nurses to initiate and manage ART patients even at primary care clinics throughout the country.

Review of staffing data revealed notable disparities' in available staff resources for ART services between sites (doctors, registered nurses and data clerks). In view of general staff shortages for ART services there is need to ensure equity in future staff resource distribution across the different types of staff cadres (taking into account the patient load e.g. Workload Indicators for Staffing Needs (WISN) data, level of facility and unique considerations of the geographic location of the site). Furthermore frequent staff rotations at ART clinics often left the clinics with staff not well trained or experienced in ART provision. It is therefore important for health managers at district and facility level to ensure that when rotating staff-there has to be a purposeful plan to ensure that at any given time-there is always someone with experience in ART management working at the ART clinic. This will ensure bridging during transitions and avoid situations where the clinic is completely manned by all new staff when all experienced staff have been rotated out of the ART clinic. Regarding staff training in particular HIV trainings, clinical and nurse mentors should use the data on training gaps to identify topics for onsite mentoring and training. Furthermore given the limited opportunities for workshop setting trainings; other platforms such as Digital Video Conferencing (DVC) and Project ECHO® should consider the data on training gaps to identify topics that can be covered through these training platforms.

Disruptions of ARV supplies were reported in several facilities due mainly to outages at the national level. Given the potential hazards such stock outages may have on patient ART adherence; risk of development of treatment failure and HIV drug resistance, it is therefore critically important to improve National level adult ARV supply chain reliability.
Several facilities had no systems in place to quickly identify and track patients who missed their follow up visits. It is there important for facilities to develop and implement systems (including SOPs) and

system to track and document outcomes for patients who miss scheduled visits using data (ePMS or EDT queries) including collaboration with Community-based organizations.

The three most common suggestions made by health workers on ways to improve patient retention in care were reducing waiting time in clinics, strengthening staff training and expansion of ART services to where they are needed most.This includes developing and implementing innovative strategies to lessen the burden of transportation on patients coming for regular clinical reviews and/or pill pick up.

Regarding the suboptimal VL monitoring particularly for pediatric patients ,it is also very important to provide mentorship and implement QI to improve VL testing rates as well as implementing facility strategies to enhance adherence and improve VL suppression rates. These may include provision of ART medicines for more than one month scripts for stable patients and consider other proven interventions such as Community-based ART distribution (e.g. Community outreach points).
Data quality issues were also identified as a major challenge through this assessment. Overall-there is an urgent and critical need to improve the completeness of the documentation of lab results in the ePMS. Given that VL results are now the pivotal lab result for monitoring both clinical and programmatic performance –there is need to ensure that these VL results data are completely documented and validated in both the PCBs and the ePMS.

1 INTRODUCTION

The Ministry of Health and Social Services (MOHSS) began an antiretroviral treatment (ART) programme as part of the programme for PMTCT in 2002. Technical guidelines and trainings were rapidly developed and ARVs services outside the PMTCT setting were piloted in 2003. According to the Namibia National Strategic Framework (NSF) for HIV and AIDS 2010/11 to 2015/16, the expected outcomes for the National Case Management (ART and Care) programme are for to ensure that more PLHIV survive longer on ART, and cared for in their communities and that more PLHIV with TB co-infection are successfully treated. The Namibia National Strategic Framework for HIV/AIDS Response (NSF) identifies several key strategic actions for the Case Management programme which include:

- Improving ART coverage as well as the service provision environment including human resource and infrastructure capacities
- Encouraging adherence to treatment schedules to minimize defaulters and drug resistance over time
- Enhancing quality of care by managing treatment standards
- Strengthening linkages across key response areas for treatment care and support, particularly referral to the ART program and the management of OIs
- Developing a more reliable monitoring and tracking systems for ART patient management
- Strengthening the pharmaceutical supply system throughout all the levels of the supply chain
- Improving coordination and harmonization of the service delivery of Community Home Based / palliative Care
- Strengthening coordination between HIV and TB so that more PLHIV with TB are successfully treated
- Scaling up implementation of the Three I's strategy

In order to monitor progress in the implementation of these key strategic, the MOHSS through the Directorate of Special Programs (DSP) periodically conducts several different supervisory and survey activities designed to help identify the gaps and successes of program implementation at all sub-national levels. The MOHSS HIV Drug Resistance Surveillance 2014 Early Warning Indicator (EWI) Report identified several quality gaps of ART services. Of major concern were the gaps in Viral Load (VL) measurement and the suppression rates after treatment initiation. Supply chain interruptions were also identified in several sites as well as gaps in retention in care and treatment adherence. These concerns were also partly identified during the MOHSS Technical Supervisory Support Visits (TSSV) 2013 Report. Furthermore consultations conducted during the 2013 NSF mid-term review as well as the development of the National ART Operational Plan 2014/15- 2016/17 identified similar concerns with quality gaps in some ART facilities.

In order to develop a deeper understanding of the quality of ART services in several of Namibia's ART facilities, the MOHSS in collaboration with the US Centres for Disease Control and Prevention (CDC) conducted the ART Service Quality Assessments (SQA) in 14 facilities from 7 high HIV burden regions of Namibia during the month of December 2014.

1.1 SQA Goals

The main goal of the SQA was to conduct a standardized, in-depth assessment of ART clinical care being provided at the sites with the following specific objectives:

v. Assess site processes that support quality of clinical care
vi. Assess adequacy of documentation of outcomes and processes
vii. Assess compliance and implementation of national guidelines
viii. Identify site barriers to providing high quality clinical care

2 METHODS

Service Quality Assessment (SQA) is an in-depth assessment of service delivery quality for HIV treatment services against national and PEPFAR programmatic standards. As such, it provides an aggregate data and analysis to inform programmatic improvement in ART clinical services, it helps identify areas for further assessment and improvement and it can be used as an opportunity to build capacity for future site level service quality assessment.

The service quality assessment (SQA) of ART (adult and pediatric) was conducted at each of the sites visited. National guidelines were used to inform the ART standards of care against which sites were assessed. This analysis focused on the following domains:

I. Medication management
II. Laboratory management
III. TB/HIV screening and infection control
IV. Quality management and improvement (QM/QI)
V. Medical records
VI. Site supervision and mentoring
VII. Community linkages
VIII. Supply chain management
IX. System processes for ART services (appointment retention, adherence, viral load management)

2.1 Sampling process

A total of 14 sites providing ART services as of the FY 2014 PEPFAR semi-annual report were purposively selected for the SQA activity. Sites were selected on terms of logistic feasibility and the representation of clinic size, regional support to the MOHSS by CDC, and type of facility.

Eligible adult patients included those who had been on ART 24-36 months and eligible pediatric patients had been on ART for a minimum of six months; excluding those dead, lost, or transferred from the clinic. From the total number eligible, every “x” number of patients was selected per site to select 15 adult and 10 pediatric patients per site.

The following table shows the list of regions and particular ART sites included in the SQA with respective data on currently active ART patients (September 2014), the number of patients (adult and pediatric) who were eligible for review, and the number of charts reviewed for each ART site.

Table 2-1 List of health facilities included and sample of patient records reviewed in the SQA

Site	Region	**Current patients on ART**	Eligible pediatric ART patients	Number of pediatric ART charts reviewed	Eligible adult ART patients	Number of adult ART charts reviewed
Engela	Ohangwena	**4889**	33	10	393	15
Katima Mulilo	Zambezi	**3526**	64	10	393	15
Katutura HC	Khomas	**6144**	14	10	717	15
Katutura Hospital	Khomas	**6734**	22	10	321	15
Khomasdal HC	Khomas	**895**	0	0	99	14
Nankudu	Kavango	**895**	3	2	61	14
Okalongo HC	Omusati	**2899**	22	5	155	15
Onandjokwe	Oshikoto	**9271**	46	9	581	15
Ongwediva HC	Oshana	**1850**	5	10	128	15
Oshakati	Oshana	**8127**	40	10	630	15
Oshikuku	Omusati	**3970**	18	10	206	15
Outapi	Omusati	**6822**	97	10	864	15
Rundu	Kavango	**4318**	82	10	741	15
Tsandi	Omusati	**1630**	12	10	127	15
TOTAL				**116**		**208**

2.2 Data Handling and Analysis

The Ministry of Health and Social Services (MOHSS), the Centers for Disease Control and Prevention (CDC) Namibia, United States Agency for International Development (USAID), US Health Resources and Services Administration (HRSA), Management Sciences for Health (MSH), International Training and Education Center for Health (ITECH) and CDC Headquarters (HQ) participated in the data collection process while data analysis was conducted by CDC HQ in Atlanta.

2.3 Data collection

Data was collected through semi-structured interviews with providers, nurses, lab technicians, data clerks, social workers, pharmacy, and social workers at selected ART clinics. Interview question responses were select one, select all, and open ended. Additionally, adult and pediatric charts were reviewed at each clinic. The patient's paper record (patient booklet), their electronic record (ePMS), and their viral load results within MEDITECH were reviewed and data was recorded, when available.

2.4 Data analysis

Data collected from interviews and patient charts was entered, by site, into Microsoft Excel spread sheets after each site visit was conducted. After all site visits were conducted, site-level data was aggregated, cleaned, and descriptive analyses were conducted by CDC HQ.

Semi-structured interviews

Interviews were conducted by each team with a variety of ART clinical staff at each site. Team members discussed their findings and submitted the site's final responses for data analysis. Qualitative responses were coded through inductive reasoning by the CDC HQ team.

ART patient chart review

Adult ART

For data validation and quality purposes, data from the patient booklet (N=118) and ePMS (N=118) for eight (8) sites was compared: Engela; Katima Mulilo; Katutura Health Centre; Intermediate Hospital Katutura; Khomasdal Health Centre; Nankudu; Onandjokwe; and Rundu.
For patient care analysis, data from all 14 sites (N=208) was utilized. The source document is patient booklet for eight (8) sites: Engela; Katima Mulilo; Katutura Health Centre; Intermediate Hospital Katutura; Khomasdal Health Centre; Nankudu; Onandjokwe; and Rundu, and combined data from patient booklet and ePMS for six (6) sites: Okalongo Health Centre; Ongwediva Health Centre; Oshakati; Oshikuku; Outapi; and Tsandi. Data collection in these six sites was conducted in such a way that a distinction could not be made for the data source (ePMS versus patient booklet). The source document was chosen to give the most accurate clinical data for each patient.

Pediatric ART

For data validation and quality purposes, site-level information from two data sources was analyzed. This includes the patient booklet (N=60) and ePMS (N=60) for six (6) sites: Engela; Katima Mulilo; Katutura Health Centre; Intermediate Hospital Katutura; Onandjokwe; and Rundu.

3 RESULTS

In the following section the key SQA results are summarized mainly through figures with accompanying brief narrative descriptions. More detailed results are shown in tabular form in the appendices section of this report.

3.1 Overview of scorecard analysis for all sites

Table 3-1 Overview of Scorecard Analysis by Site

Site number*	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Adult/Adolescent care and treatment														
Patient tracking	Y	R	Y	R	Y	R	R	DG	Y	R	R	DG	Y	R
Adherence support	DG	DG	LG	DG	LG	LG	DG	DG	DG	DG	LG	LG	LG	LG
ART monitoring adult	DG	R	DG	DG	DG	LG	LG	LG	DG	DG	DG	DG	LG	DG
Supply chain reliability (ARVs)	Y	DG	R	LG	DG	R	LG	R	R	DG	LG	LG	R	R
Reference materials	DG	DG	DG	LG	DG	R	LG	DG	DG	DG	DG	DG	DG	DG
Adult care and support														
Cotrimoxazole	DG	DG	DG	DG	DG	DG	DG	DG	DG	DG	DG	DG	DG	DG
Facility linkage to community care and support	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Supply Chain Reliability Cotrimoxazole (CTX)	DG	DG	DG	DG	DG	DG	DG	R	DG	DG	DG	DG	DG	DG
PHDP	LG	R	LG	DG	DG	R	R	LG	R	R	Y	R	R	R
Food and nutrition														
Pediatric growth monitoring	0	Y	R	R	R	R	R	R	R	R	Y	Y	R	R
Laboratory														
Testing interruptions	Y	R	DG	DG	DG	DG	0	DG	0	Y	LG	R	Y	Y
Results and information management	DG	DG	DG	DG	DG	Y	0	DG	0	DG	LG	LG	DG	LG
Medication management														
Supply chain management	DG	DG	DG	LG	LG	0	LG	DG	DG	DG	DG	DG	LG	DG
Medication dispensing	DG	Y	LG	LG	R	LG	LG	DG	LG	DG	LG	DG	LG	LG
Pediatric care and treatment														
Pediatric ART eligibility	DG	DG	DG	LG	Y	LG	DG	DG	DG	DG	LG	LG	DG	LG
Pediatric ART monitoring	DG	Y	DG	LG	DG	Y	DG	DG	LG	DG	DG	DG	LG	DG
Supply chain reliability (pediatric ARVs)	Y	DG	DG	LG	R	R	DG	Y	DG	DG	DG	DG	R	R
Supply chain reliability (pediatric cotrimoxazole)	DG	DG	DG	DG	DG	DG	DG	R	DG	DG	DG	DG	DG	DG
Pediatric cotrimoxazole	DG	LG	DG	DG	DG	DG	DG	DG	DG	DG	DG	DG	DG	DG
Dosing of pediatric ARVs	DG	DG	DG	DG	DG	DG	DG	DG	DG	DG	DG	DG	DG	DG
Pediatric TB screening	DG	DG	DG	LG	LG	Y	DG	DG	DG	DG	R	R	DG	R
Routine HIV testing for children	R	R	R	R	R	R	0	R	0	R	R	R	R	R
Adolescent support services	DG	Y	R	DG	R	R	R	DG	0	LG	R	R	DG	R
Pediatric facility referral to community care and support services	R	R	R	R	R	R	R	R	R	R	R	R	R	R
TB/HIV														
Adult/Adolescent TB screening	DG	LG	DG	LG	DG	LG	DG	DG	DG	DG	R	LG	R	R
Isoniazid Preventive Therapy (IPT)	0	R	LG	Y	R	R	LG	Y	R	LG	R	Y	R	LG
Site/performance management (ART)														
Supportive supervision	Y	Y	R	R	Y	R	LG	R	DG	LG	R	R	DG	R
Site/performance management (ART – QM/QI system)														
HIV QM/QI System	LG	R	LG	DG	Y	Y	Y	R	DG	R	R	LG	Y	Y
Assessment and Utilisation of Performance Data	R	R	Y	LG	Y	Y	R	R	Y	LG	R	Y	Y	Y

*Site names: (1) Engela; (2) Katima Mulilo; (3) Katutura Health Centre; (4) Katutura International Hospital; (5) Khomasdal Health Centre; (6) Nankudu; (7) Okalongo Health Centre; (8) Onandjokwe; (9) Ongwediva Health Centre; (10) Oshakati; (11) Oshikuku; (12) Outapi; (13) Rundu; (14) Tsandi.

3.2 Adult /Adolescent Care and Treatment

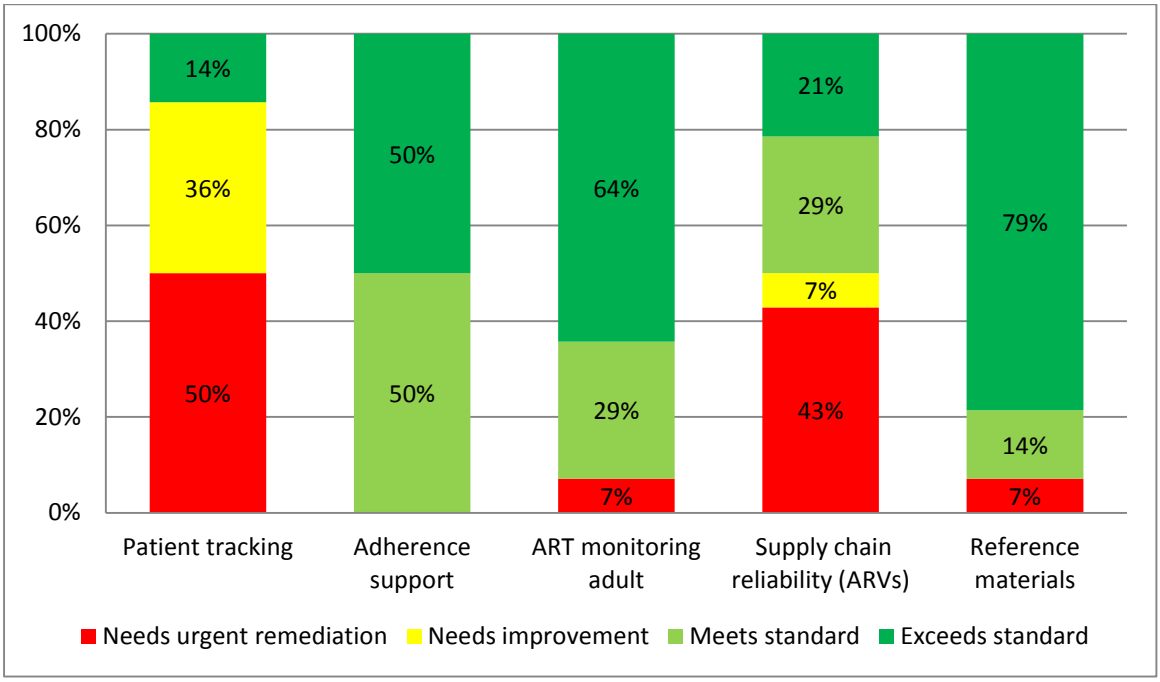


Figure 3-1 Adult/Adolescent Care and Treatment: Aggregate Site Performance per Domain

The aggregate results in **Figure 3-1** *(see also Table 1 in appendices)* show that the Adherence Support, Adult ART Monitoring and Reference Materials domains in most facilities visited largely met or exceeded the standards. However key gaps were identified in patient tracking (50%) and ARV supply chain reliability (43%).

3.3 Pediatric care and treatment

Figure 3-2 shows that pediatric ART eligibility, Pediatric ART monitoring, Pediatric Cotrimoxazole, Pediatric Cotrimoxazole Supply Chain (93%) and Dosing of Pediatric ARVs (100%) either met or exceeded the minimum standards. There were very minimal interruptions in supply chain reliability for Pediatric Cotrimoxazole (7%).

Figure 3-2 and **Figure 3-3** however show key gaps in Pediatric ARV supply chain (29%) , Pediatric TB Screening (21%),Routine Screening for HIV testing for children (100%),Adolescent Support Services (54%); Pediatric Facility Referral to Community Care and Support Services (100%) and Pediatric Growth Monitoring (77%)

Figure 3-2 Paediatric Care and Treatment (1)

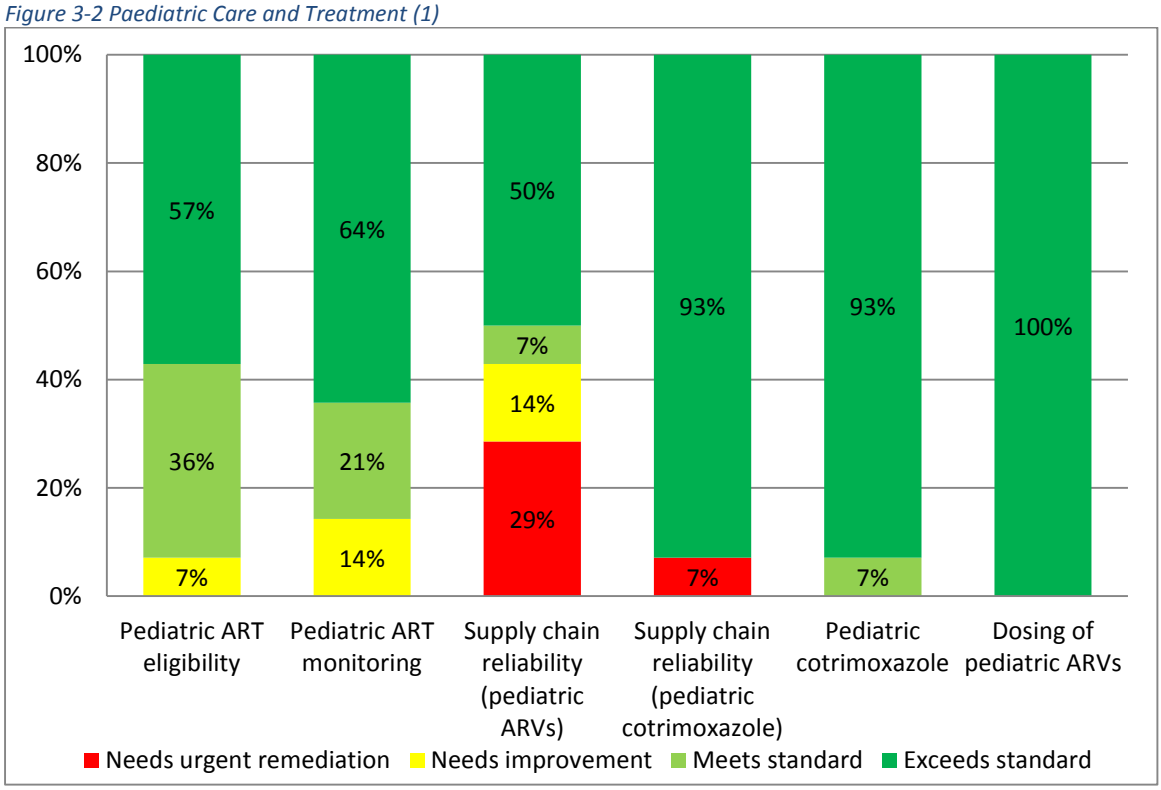
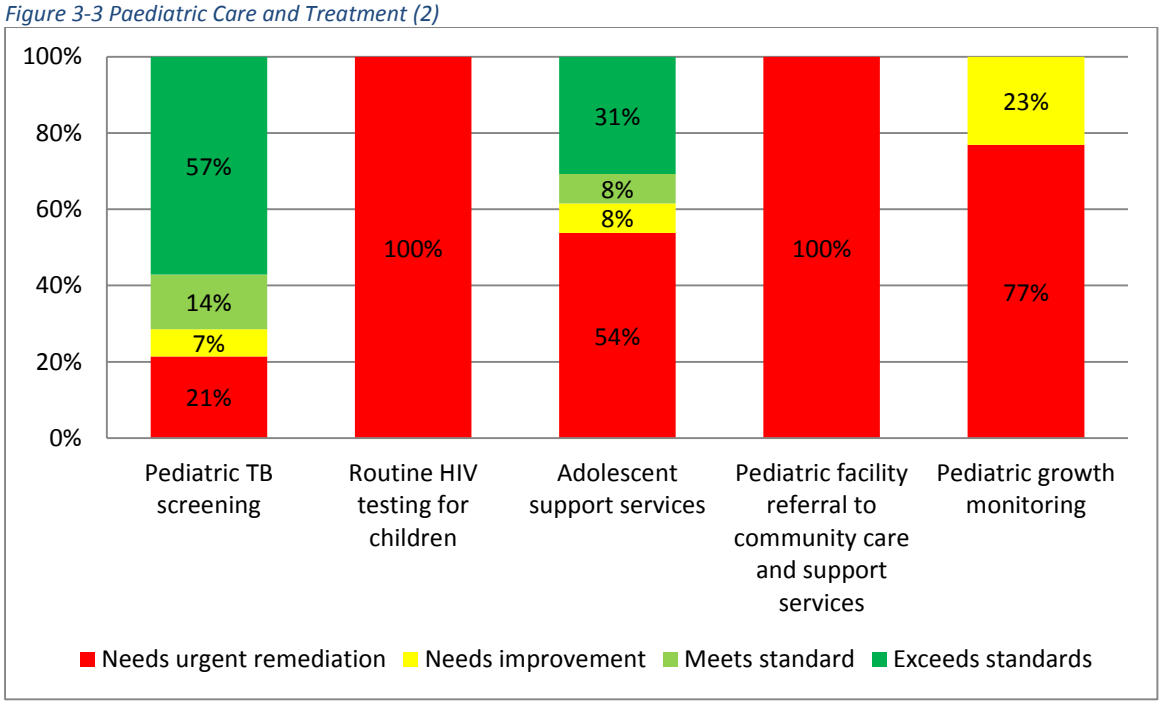


Figure 3-3 Paediatric Care and Treatment (2)



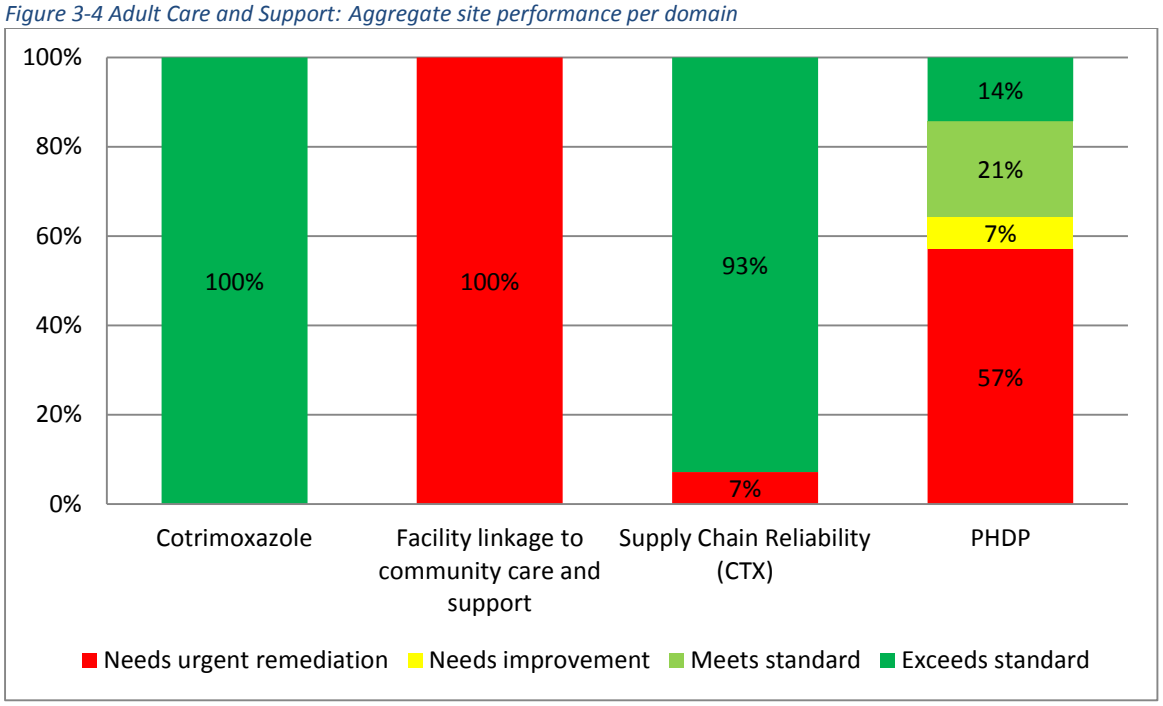
3.4 Food and Nutrition/Pediatric growth monitoring

Table 3-2 (*see appendices section*) shows that 77% of the sites did not have documentation of anthropometric assessment (i.e. weight and length or height, BMI, MUAC, or growth monitoring curve) during the last clinical visit per national guideline. The remaining 23% of facilities had some documentation on nutritional assessment.

3.5 Adult care and support

In terms of Adult Care and Support **Figure 3-4** shows that there was 100% prescription of Adult Cotrimoxazole (CTX) across all sites assessed. Interruptions of Supply Chain for Adult CTX were very minimal (7%).However there were no systems in place for facility linkage to community care and support (100%).In addition Facility-based Positive Health Dignity and Prevention (PHDP) activities were not implemented in the majority of facilities visited (57%).

Figure 3-4 Adult Care and Support: Aggregate site performance per domain



3.6 Laboratory

Figure 3-5 Laboratory Testing Interruptions and Information Management

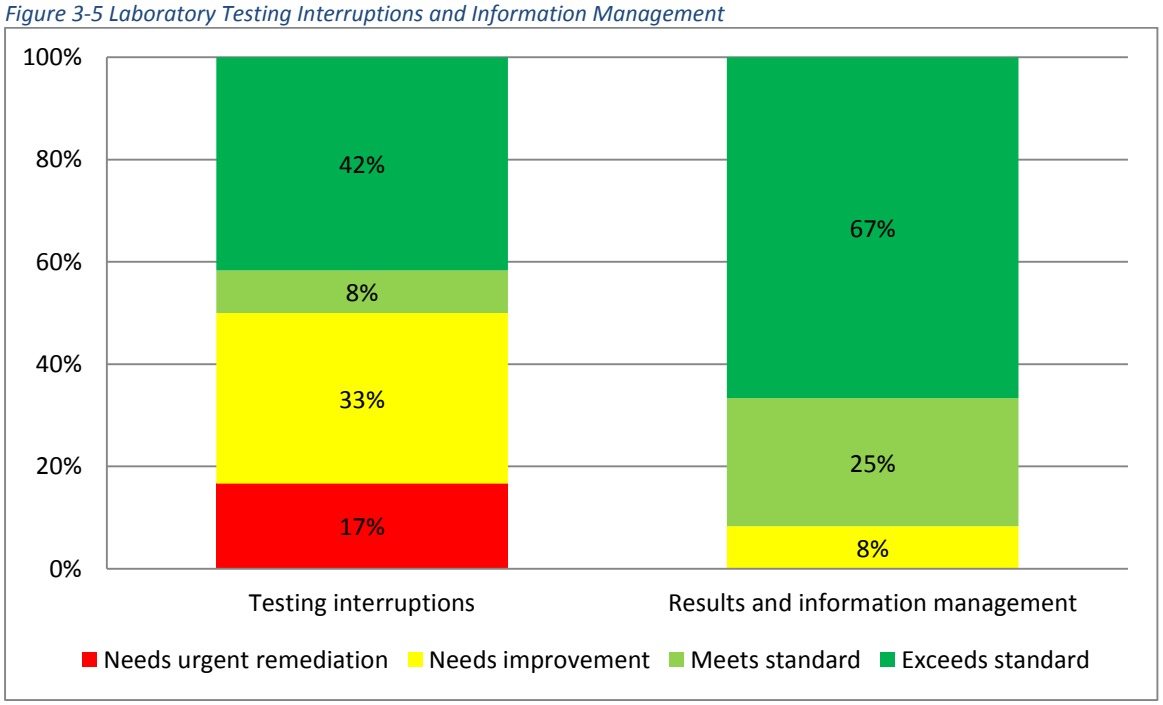


Figure 3-5 shows that almost 60% of the sites experienced HIV testing interruptions during the last 3 months due to equipment failures, supply or reagent stock outs, expired supplies or reagents, staff shortages, or infrastructure issues. However, 17% of the facilities experienced shortage of supplies and reagents for core laboratory tests or were not within their expiration dates.92% of the facilities had standardized forms/procedures and electronic data management system (the Meditech) that enabled them to manage information and data for laboratory services.

3.7 Medication management

Figure 3-6 Medication Management

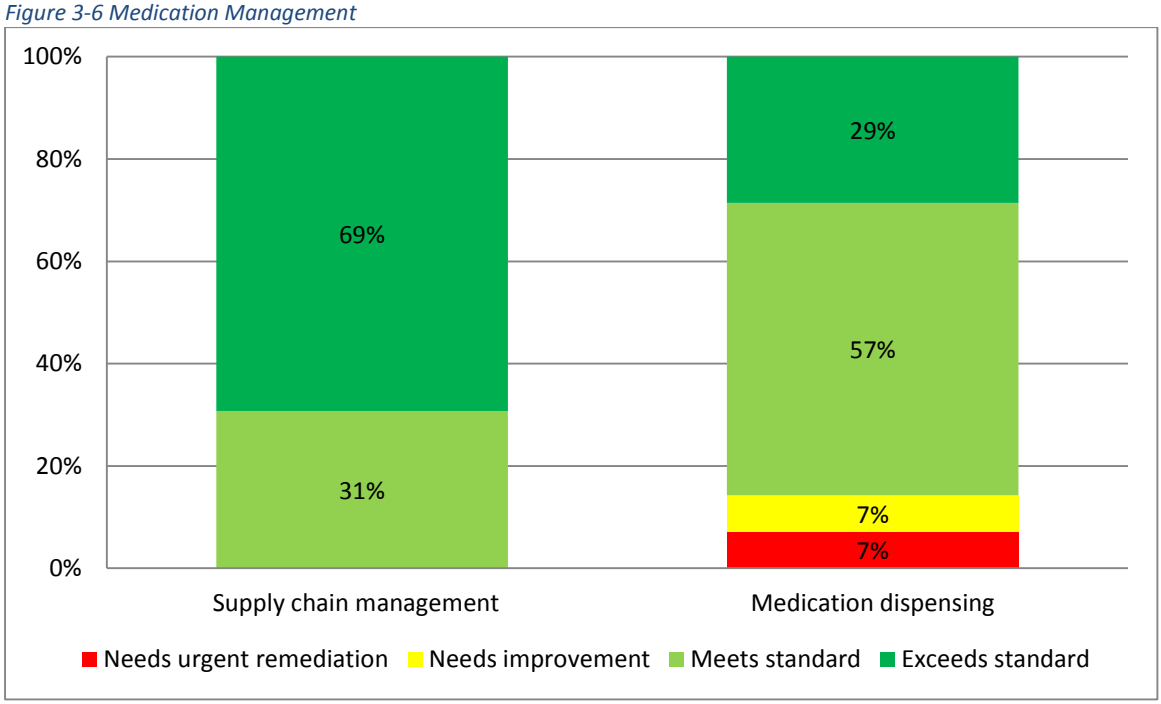


Figure 3-6 shows that 69% of the facilities had excellent documentation on medication dispensing which were complete, up to date and reviewed routinely. Medication management system was found to be satisfactory in the remaining 31% of the assessed facilities.

3.8 TB/ HIV

Figure 3-7 TB/HIV

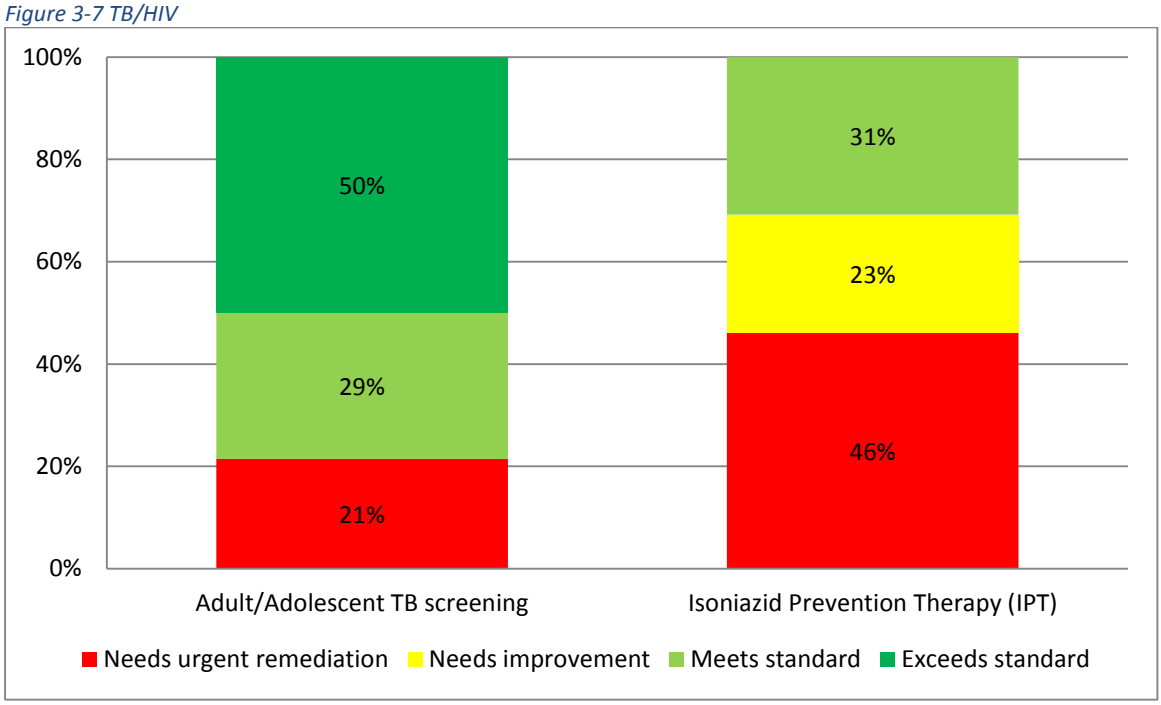


Figure 3-7 shows that 79% of sites had standard operating procedures and algorithm for symptomatic TB screening of patients (cough, fever, night sweats, and weight loss at a minimum) attending HIV care and treatment services during their last clinical visit. Patient chart reviews indicated that more than 80% of clients were symptomatically screened for active TB infection during their last clinic visit.

However 46% of the sites did not have standard procedures for administration of Isoniazid Preventive Therapy (IPT). 23% were providing IPT services for up to 80% of the eligible patients while 31% of sites provided IPT for 80-99% of the eligible clients.

3.9 Site performance management (ART) and QM/QI system

Figure 3-8 Site Performance Management (ART)/Supportive Supervision

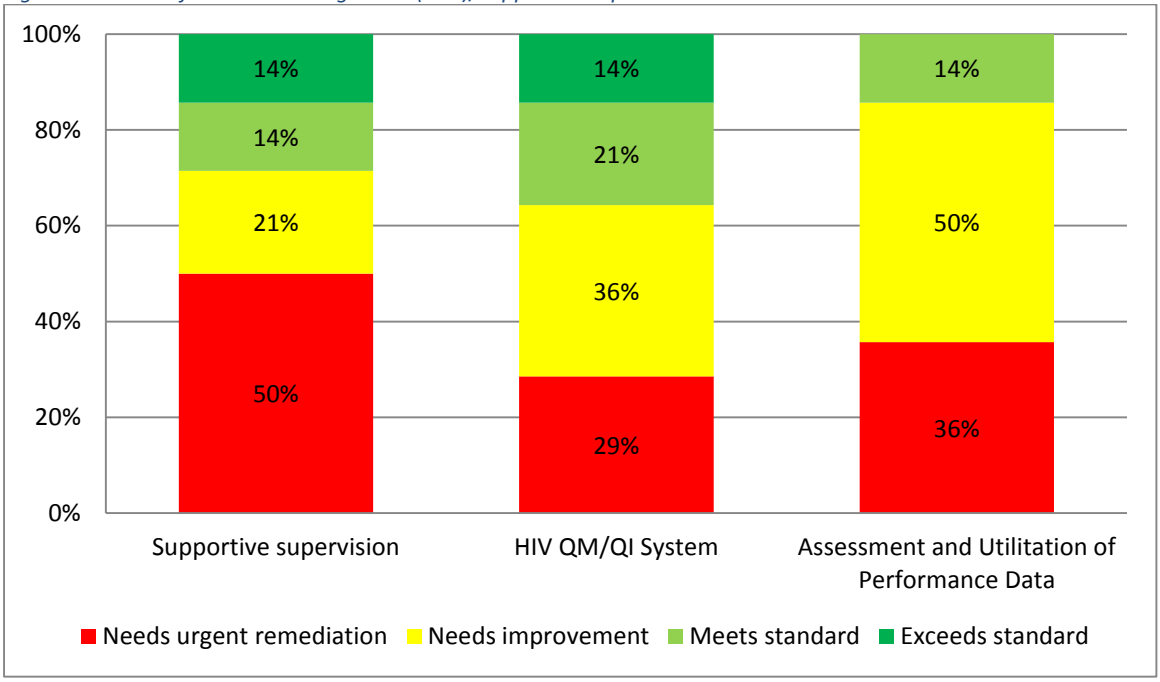


Figure 3-8 shows that 50% of the sites reported either no supervisory visit from higher level within the past 3 months or visits that were not regular enough during the last 12 months. Furthermore only 35% of sites reported having a functional HIV QM/QI system and only 14% of sites reported conducting routine site level assessments and utilization of performance data.

3.10 Patient tracking

Table 3-2 shows that 43% of sites reported interruption of ART services in the last 12 months and 57% of these interruptions were attributed to commodity shortages (ARVs).93% of sites had standard for appointing patient follow up visits; 57% of sites defined missed appointment as “same day”. “Transportation” was cited as the main reason for missed appointments in 86% of the responses and incorrect patient information (50%) as well as lack of human resources (43%) were cited as the main challenges faced with regard to patient tracking.

Table 3-2 Patient Tracking (N=14 sites)

Characteristic	N (%)
Any interruption of ART services in the last 12 months	6 (43%)
Median number of episodes	2 (2)
Median length of episodes	1-2 weeks
Reason for HIV service interruption	
Human resource shortage	1 (14%)
Lab testing interruptions/ shortage	1 (14%)
Commodities shortages (ARVs)	4 (57%)
Other	1 (14%)
Standard for appointing patient follow-up visit	13 (93%)
Documentation of follow-up date in patient booklet	12 (92%)
Documentation of follow-up date in patient passport	10 (77%)
Use of appointment book	5 (38%)
Other	7 (54%)
When are visits appointed for following patients:	
After initial visit/enrolment to HIV care (# of weeks)	2 (6)
Patients in HIV care not eligible for ART (pre-ART) (# of weeks)	12 (8)
After ART initiation (# of weeks)	2 (0)
After a VL specimen is collected (# of weeks)	4 (.5)
If VL at 6 months < 1000 (# of weeks)	12 (6)
If VL at any time is > 1000 (# of weeks)	4 (0)
Definition of "missed appointment"*	
Same day	8 (57%)
Less than 2 weeks	4 (29%)
More than 2 weeks	2 (14%)
Process in place after a missed appointment*	
No process/ system	5 (36%)
Phone calls to patient	5 (36%)
Adherence counseling or support is provided	4 (28%)
How is a missed appointment identified*	
ePMS used to generate a list of patients	3 (23%)
Data clerk identifies patients	3 (23%)
Other	3 (23%)
Review of patient booklet*	4 (31%)
Individual responsible for monitoring the missed appointments:	
Data clerk	6 (46%)
Provider	3 (23%)
Default tracer / community counselor / community organization	3 (23%)
Type of patient tracking conducted when a patient misses an appointment	
Phone	11 (42%)
Community counselor (facility based lay counselor)	2 (8%)
Community based organization	7 (27%)
Home visit	4 (15%)
SIMS	2 (8%)
Patient tracking procedures are initiated:	
<1 month	10 (71%)
30-90 days	2 (14%)
>90 days	1 (7%)
Main reasons patient cite missing appointments:	
Transportation	12 (86%)
Work	6 (43%)
Forgot	4 (29%)
Not able to determine follow-up date*	4 (29%)
Out of town*	4 (29%)
Other	3 (21%)
Very sick	2 (14%)
Lack full disclosure (with partner or child)*	2 (14%)
Competing activities (example: funeral)*	2 (14%)
Feel well	1 (7%)
Child / home care responsibilities	1 (7%)
Outcomes are documented	8 (62%)
Estimated average percentage of missed patients who return to services	
0-25%	2 (17%)
25-50%	3 (25%)
51-75%	5 (42%)
76-100%	2 (17%)
Challenges faced with regard to patient tracing*	
Lack of human resources	6 (43%)
Incorrect patient information	7 (50%)
No system in place	1(7%)

3.11 ART Monitoring

Table 7-2 *(see Appendices section)* show that all of the sites assessed reported providing adherence monitoring through both pill counts (86%) and self-reporting (86%). 86% of sites provided adherence counseling daily and adherence counseling job aids were also used in 86% of the sites. Providers conducted adherence assessments in the majority of sites visited (86%).Community Counselors provided background adherence counseling in almost all the sites visited (92%).93% of sites reported that adherence counseling was conducted by someone who had received adherence counseling training .However majority (55%) of those trained adherence counselors reported that they had last been trained more than 5 years ago.100% of sites reported documenting adherence counseling in either the patient care booklet (57%) or the patient passport (43%). Major reasons cited by patients for poor adherence included forgetting (79%); stigma (57%) and not having food (57%).

Key challenges cited by sites in adherence counseling were; managing poor adherence in children (57%), managing patients with underlying factors for poor adherence (43%).Key support measures that would help provide better/ more effective adherence counseling was training (79%); more job aids (57%) and additional human resources (50%).

3.12Facility linkage to community care and support services

Table 3-3 Facility Linkage to Community Care and Support Services

Characteristic	N (%)
Refer clients for community support services (yes) Type of services clients are typically referred for	7 (50%)
OVC services (for children in care)	
Adherence support	5 (71%)
Disclosure	4 (57%)
Family testing	3 (43%)
Individual who routinely refers clients for community support services (4 were available for interview)	2 (29%)
Social worker	
Nurse	
Individual's affiliation – government	3 (75%)
Individual is paid	1 (25%)
Document referred clients for community support	4 (100%)
Document if patient received services referred for *(Katutura Hospital, 5 adult patients were referred last quarter)*	3 (75%) 1 (33%)
Challenges with referring/ engaging patients for community services	1 (100%)
No community services available	
Limited community services available	
Community services have limited capacity to address patient needs	
Other	2 (29%)
What would help provide better/ more effective community linkages	5 (71%)
Wider range of community services available	2 (29%)
Additional resources for supporting community services	3 (43%)
Stronger relationship between facility and community providers/services	
Other (training)	4 (31%) 2 (15%) 6 (46%) 1 (8%)

Table 7-2 shows that few community groups remain active in the environment of the facilities assessed and many staff were not aware of available referral resources -limited availability of community services (71%) was cited as the major challenge for referring patients for community linkages. However 50% of sites reported referrals to community care and support services with the major types of services requested for the referrals were Orphans and Vulnerable Children (OVC) services (71%), Adherence support (57%) and disclosure (43%).

3.13 Facility Staffing for ART care and support services

Table 3-4 Facility Staffing at ART clinics (N=14)

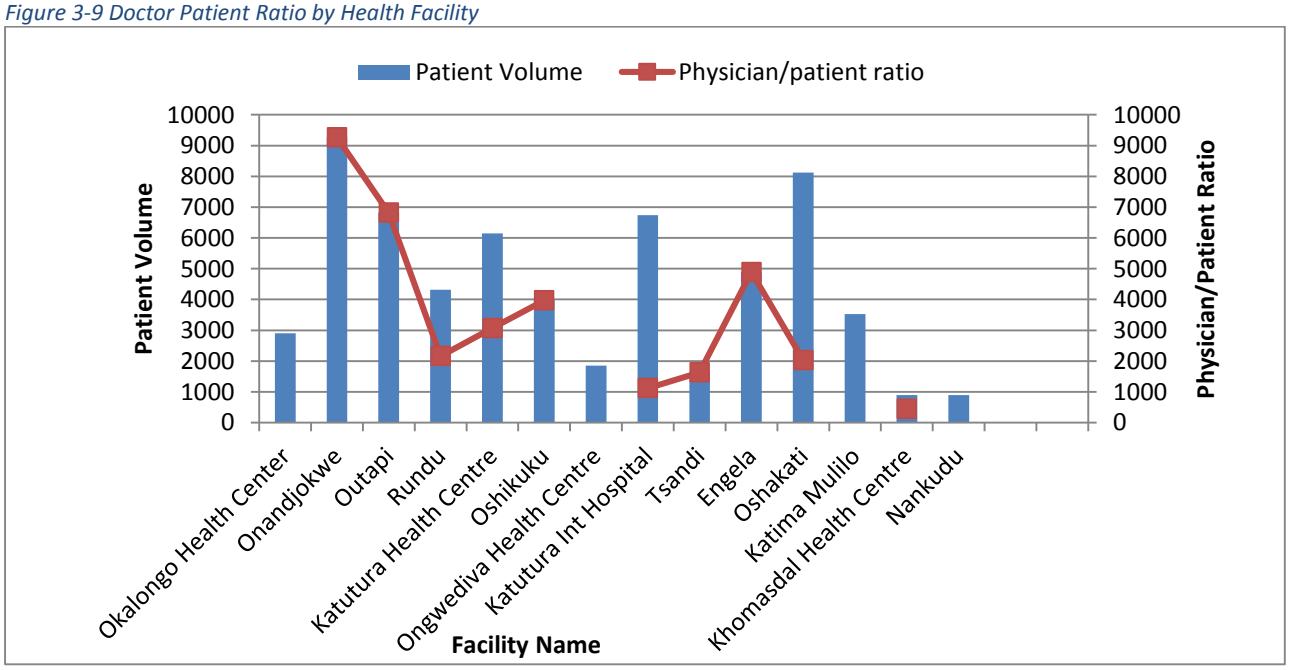
	TOTAL number of employees at all ART clinics	Average among 14 sites	Minimum	Maximum
Physician	**21**	1.5	0	6
Pharmacist	**27**	1.9	0	8
Registered Nurse	**61**	4.4	1	10
Enrolled Nurse	**33**	2.4	0	4
Lab technician	**34**	2.4	0	14
Data clerk	**33**	2.4	0	5
Community Health Worker/ Lay counselor	**52**	3.7	1	10
Social worker	**4**	0.3	0	2

Table 3-4 illustrates that at least one clinic reported having zero physicians, pharmacists, enrolled nurse, lab technician, data clerk, and social worker. There are only 4 reported social workers across all 14 sites. Key staff at most facilities were registered nurses (average 4.4 per facility), lay counselors (average 3.7/facility) while there was minimal staffing in relation to doctors (1.5), pharmacists (1.9) and social workers (0.3).

3.13.1 Physician/Patient Ratios

Figure 3-9 (*see also appendices: Table 7-3 Select Staffing type for ART clinic by Site*) shows the Physician/patient ratio by site. 4 sites (Okalongo, Ongwediva Health Centre, Katima Mulilo and Nankudu) had no doctors assigned to the sites at the time of the assessment. Onandjokwe (1:9279), Outapi (1:6822), Engela (1:4889); Oshikuku (1: 4000) and Katutura Health Centre (1:3000) had the highest doctor/patient ratios while Khomasdal HC (1:448) and Katutura Hospital (1: 1122) had the lowest doctor/patient ratios at the time of the assessment.

Figure 3-9 Doctor Patient Ratio by Health Facility



3.13.2 Registered Nurse/Patient Ratios

Figure 3-10 Registered Nurse/Patient Ratio by Health Facility

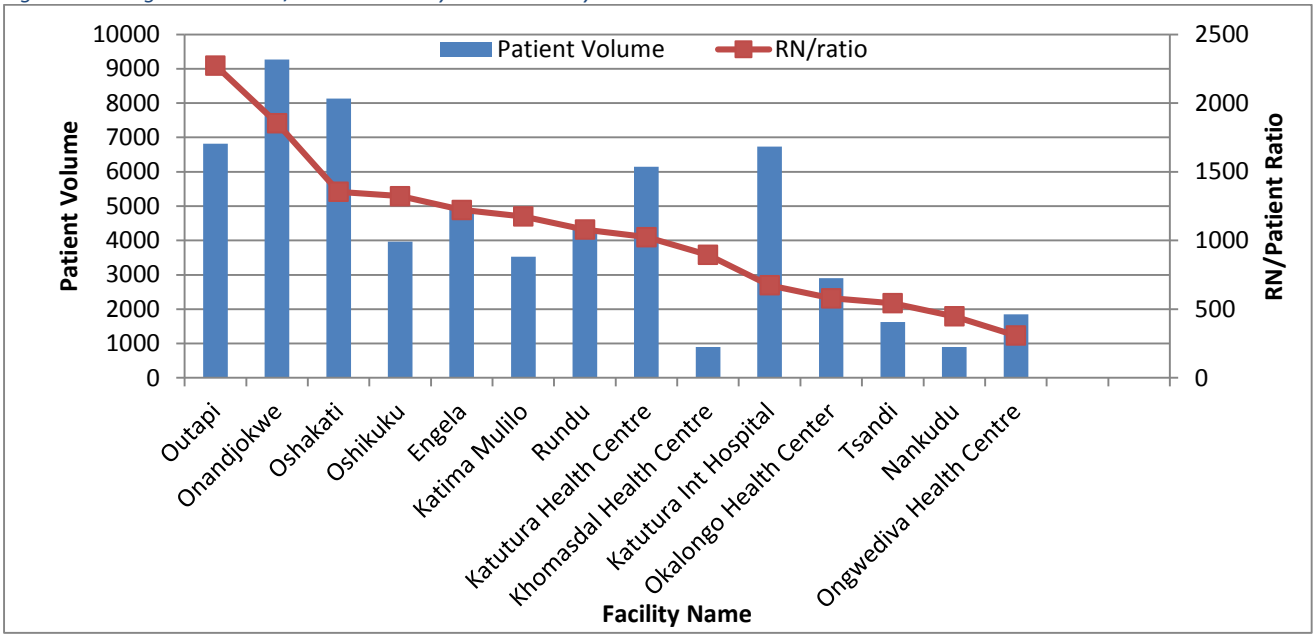


Figure 3-10 (*see also appendices :**Table 7-3** Select Staffing type for ART clinic by Site*) shows that there were variations between facilities in patient load per registered nurse with Outapi Hospital (1:2100) and Onandjokwe (1:1800) also having the highest registered nurse patient ratios while Nankudu (1:448) and Ongwediva HC had the lowest ratios (1:200).

3.13.3 Data Clerk/Patient Ratios

Figure 3-11 Data Clerk/Patient Ratios by Health Facility

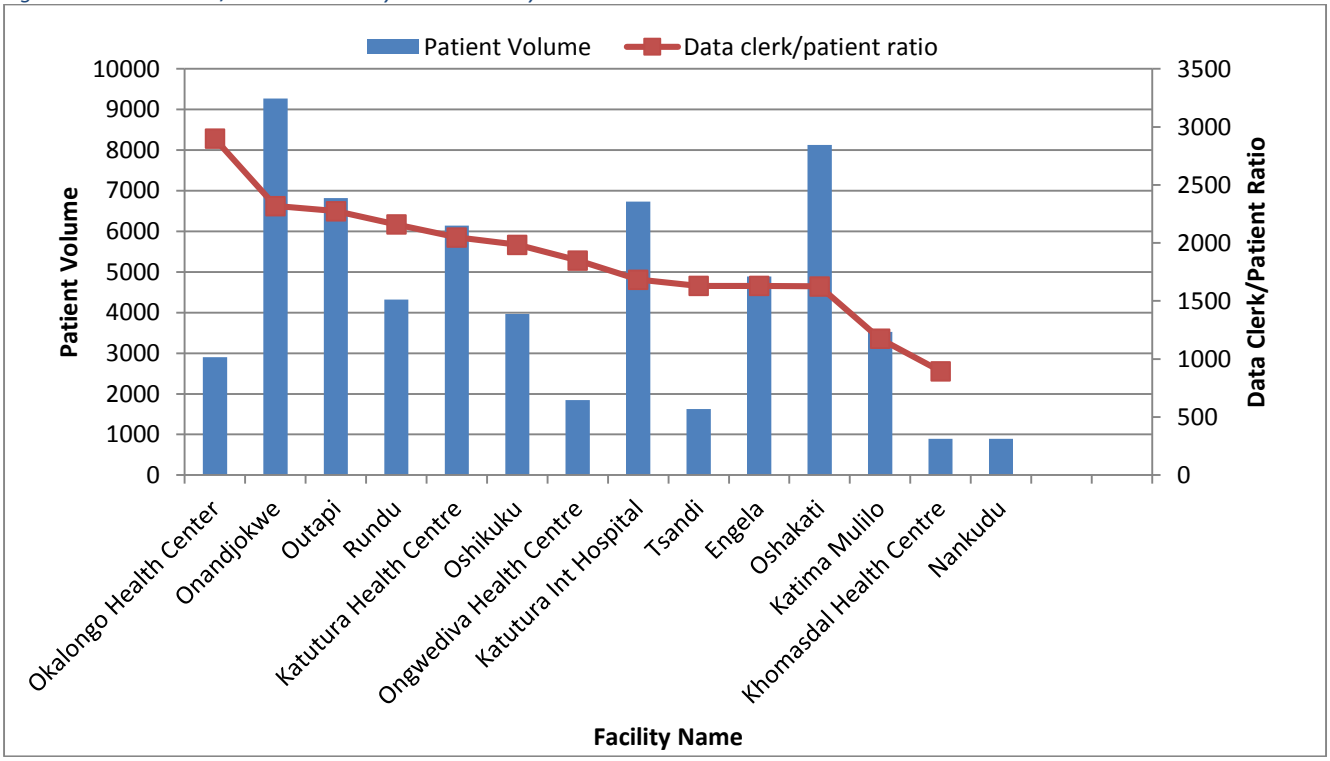


Figure 3-11 shows that there were also variations in distributions of data clerks. Nankudu had no data clerk assigned to the facility and Okalongo Health Centre had the highest Data clerk/patient ratio (1:2800) while Khomasdal had the lowest (1:800).

3.13.4 Select staff training for ART clinics by staff type

Table 3-5 Select Staff Training for ART Clinics by Staff Type

	TOTAL	Adult ART	Pediatric ART	ART adherence counseling	ART laboratory monitoring	ART pharmacy	ART data management
Physician	**21**	17 (81%)	9 (43%)	7 (33%)	11 (52%)	10 (48%)	3 (14%)
Pharmacist	**27**	7 (26%)	6 (22%)	2 (7%)	0 (0%)	7 (26%)	2 (7%)
Registered Nurse	**61**	38 (62%)	20 (33%)	13 (21%)	27 (44%)	20 (33%)	8 (13%)
Enrolled Nurse	33	7 (21%)	5 (15%)	6 (18%)	4 (12%)	2 (6%)	3 (9%)
Lab technician	**34**	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Data clerk	33	0 (0%)	0 (0%)	0 (0%)	0 (0%)	3 (9%)	19 (58%)
Community Health Worker/ Lay counselor	**52**	2 (4%)	2 (4%)	33 (63%)	0 (0%)	0 (0%)	13 (25%)
Social worker	**4**	1 (25%)	1 (25%)	1 (25%)	0 (0%)	0 (0%)	0 (0%)

Table 3-5 shows that the majority (81%) of physicians were trained in adult ART followed by registered nurses (62%).Only 26% of pharmacists and 21% of enrolled nurses had been trained in adult ART. Less than 50% across all cadres had been trained in pediatric ART and ART pharmacy .63% of lay counselors were trained in adherence counseling but less than 35% across the cadres of doctors, nurses and pharmacist were trained in ART adherence counselling.58% of data clerks had been trained in ART data management but less than 15% of doctors, nurses and pharmacists reported having been trained in ART data management.

3.13.5 Staffing duration of employment at ART sites

Table 3-6 Staffing Duration of employment at ART sites

	TOTAL	< 6 months	6 months to < 1 year	1-2 years	2-5 years	>5 years
Physician	**21**	4 (19%)	**7 (33%)**	3 (14%)	4 (19%)	2 (10%)
Pharmacist	**27**	5 (19%)	**9 (33%)**	0 (0%)	8 (30%)	0 (0%)
Registered Nurse	**61**	12 (20%)	11 (18%)	1 (2%)	16 (26%)	**22 (36%)**
Enrolled Nurse	**33**	**8 (24%)**	5 (15%)	7 (21%)	7 (21%)	6 (18%)
Lab technician	**34**	3 (9%)	2 (6%)	3 (9%)	4 (12%)	**22 (65%)**
Data clerk	**33**	0 (0%)	1 (3%)	4 (12%)	**20 (61%)**	8 (24%)
Community Health Worker/ Lay counselor	**52**	0 (0%)	1 (2%)	2 (4%)	18 (35%)	**31 (60%)**
Social worker	**4**	0 (0%)	**1 (25%)**	**1 (25%)**	0 (0%)	0 (0%)

Table 3-6 shows that 52% of physicians and pharmacists had been employed in the sites for less than one year. In contrast more than 60% of registered and enrolled nurses had been at the sites for more than 1 year. Of the 33 data clerks in the sites assessed, 85% had been at the sites for between 2 -5 years.60% of lay counselors and 65% of laboratory technicians had

been at the site for more than 5 years while only 6 % of data clerks had been at the sites for periods of up to 2 years.

3.14 Chart Review: Adults on ART between 1-2 years: Data validation and quality

SOURCE: data from the patient booklet (N=118) and ePMS (N=118) for eight (8) sites was compared: Engela; Katima Mulilo; Katutura Health Centre; Katutura Int Hospital; Khomasdal Health Centre; Nankudu; Onandjokwe; and Rundu.

Table 3-7 Chart Review: Adults on ART between 1-2 years (N=208): Data Validation and Quality

Variable	Patient booklet n (%)*	ePMS n (%)*
Female	70 (59%)	70 (59%)
CD4 documented at ART initiation	113 (96%)	113 (96%)
CD4 range (cells/mm^3)	8 – 687	8 – 694
CD4 median (cells/mm^3)	243	231
<100	15 (13%)	16 (14%)
100-199	29 (26%)	30 (27%)
200-349	58 (51%)	55 (49%)
350-499	9 (8%)	10 (9%)
>500	2 (2%)	2 (2%)
Documentation		
Other indication for ART initiation (Yes)	47 (40%)	41 (35%)
Hb or Hct at baseline (Yes)	100 (85%)	66 (57%)
Creatinine clearance at baseline (Yes)	79 (68%)	16 (14%)
ALT at baseline (Yes)	92 (79%)	61 (53%)
HBsAg at baseline (Yes)	51 (64%)	30 (29%)
If Yes, HBsAg result positive (Yes)	7 (14%)	2 (7%)
HBsAg ever documented (Yes)	85 (86%)	52 (81%)
If Yes, HBsAg result positive (Yes)	10 (12%)	3 (6%)
CD4 and VL documentation	**Patient booklet n (%)***	**ePMS n (%)***
CD4 documented within 15 months of ART initiation (Yes)	87 (74%)	74 (63%)
CD4 range (cells/mm^3)	8 – 687	95 – 965
CD4 median (cells/mm^3)	243	406
VL documented within 9 months of ART initiation (Yes)	85 (72%)	42 (36%)
Less than 50 (including target not detected)	19 (22%)	8 (19%)
Less than 400	30 (35%)	18 (43%)
Less than 1000 (including target not detected)	62 (73%)	31 (73%)
Greater than or equal to 1000	23 (27%)	11 (26%)
Greater than or equal to 5000	7 (8%)	3 (7%)
CD4 or VL documented (Yes)	102 (86%)	81 (69%)
Documentation at last visit		
Review of side effects	105 (91%)	4 (3%)
Adherence support**	114 (98%)	105 (90%)
Receipt of cotrimoxazole	112 (98%)	90 (79%)
Receipt of at least 3 prevention services***	44 (37%)	1 (1%)
TB screening	111 (95%)	98 (84%)
TB screen result positive	3 (3%)	4 (4%)
IPT prophylaxis (Y/N)****	31 (32%)	16 (20%)
IPT prophylaxis (NA)*****	10 (9%)	13 (14%)

* N values differ due to missing data
**Site has documentation of all three adherence support elements
*** Site has documentation of delivery of, or referral to, at least three of the six HIV prevention messages and services (risk reduction counseling, condom provision, adherence counseling, partner HIV testing and counseling, STI diagnosis/treatment, contraception/ safer pregnancy counseling and provision)
****Site has documentation that newly enrolled HIV patients who screen negative for active TB are given IPT
*****Only four sites had documentation of IPT Prophylaxis not available (NA) due to current/ prior IPT or TB Rx, therefore this percentage may be an underrepresentation of the total percentage among all sites

Data from the patient booklet (N=118) and ePMS (N=118) for eight (8) sites was compared and shown in **Table 3-7**. No major differences between the ePMS and PCB were found in documented data on gender (59% female) and documentation of CD4 results at ART initiation in the patient booklet and ePMS (96%).
Major differences in the documentation of other laboratory results were found between the patient booklet and EPMS. Overall the patient booklet showed greater documentation of the following lab results than found in the ePMS: Hb, AlT at baseline, creatinine clearance at baseline and HBsAg

3.14.1 CD4 and VL documentation

74% and 63% of patients reviewed had records showing CD4 documented within 15 months of ART initiation in the PCB and EPMS respectively. The documented CD4 ranges were significantly lower in the PCBs than in the EPMS [8-687 vs 95-965 respectively].Similarly the median CD4 recorded were significantly lower in the PCBs than EPMS the (406 vs 243 respectively).
72% and 36% of patients reviewed had records showing VL documented within 9 months of ART initiation in the PCB and EPMS. The proportions of patients with VL results classified within categories (i.e. <50, <400, <1000, ≥1000 and ≥ 5000) were however similar in both the PCB and EPMS

3.14.2 Documentation at last visit

98% and 79% had CTX documented in the PCB and ePMS respectively.37% and 1% had receipt of at least 3 prevention services documented in the PCB and ePMS respectively.95% and 84% had TB screening documented in the PCB and ePMS respectively.3% and 4% were documented as having screened positive in the PCB and ePMS respectively.32% and 20% were documented as being on IPT in the PCB and ePMS respectively.

3.15 Chart review: Pediatric patients on ART at least 6 months: Data validation and quality

SOURCE: site-level information from two data sources was analyzed. This includes the patient booklet (N=60) and ePMS (N=60) for six (6) sites: Engela; Katima Mulilo; Katutura Health Centre; Katutura Int Hospital; Onandjokwe; and Rundu.

Table 3-8 shows similar data quality findings of data entered in EPMS and PCBs as follows:

- 60% female
- Median age at ART initiation 5 years (see also figure 26 for age distribution)
- 97% of patients aged ≥5years had CD4 count at ART initiation
- 0% nutritional assessments used to categorize nutrition status

However there were differences reflecting key data entry gaps in the ePMS in data captured for CTX given at last visit (93% in PCB vs 63% in ePMS) and TB screening at last visit (93% in PCB vs 78% in ePMS).

Table 3-8 Chart Review: Pediatric Patients on ART at least 6 months: Data Validation and Quality

Variable	Patient booklet N (%)	ePMS N (%)
Female	36 (60%)	36 (60%)
Age at ART initiation		
Range	0.2 – 12.4 years	0.2 – 12.3 years
Median	4.5 years	5.0 years
Under 2 years	15 (25%)	14 (23%)
2 to <5 years	16 (27%)	15 (25%)
5 to <10 years	23 (38%)	25 (42%)
10 to <15 years	6 (10%)	6 (10%)
CD4 count at ART initiation (age ≥5 yrs)	28 (97%)	28 (90%)
Documentation at last clinical assessment:	**Patient booklet N (%)**	**ePMS N (%)**
Cotrimoxazole given at last visit	56 (93%)	37 (63%)
Appropriate growth monitoring at last visit	17 (34%)	14 (28%)
Nutrition assessment used to categorize nutrition status	1 (2%)	0 (0%)
TB screening at last visit	57 (93%)	47 (78%)

3.16 Chart Review: Adults on ART between 1-2 years: Patient care

SOURCE: Source document Data from all 14 sites (N=208) was utilized. The source document* is patient booklet for eight (8) sites: Engela; Katima Mulilo; Katutura Health Centre; Katutura Int Hospital; Khomasdal Health Centre; Nankudu; Onandjokwe; and Rundu, and combined data from patient booklet and ePMS (composite) for six (6) sites: Okalongo Health Centre; Ongwediva Health Centre; Oshakati; Oshikuku; Outapi; and Tsandi. Data collection in these six sites was conducted in such a way that a distinction could not be made for the data source (ePMS versus patient booklet). The source document was chosen to give the most accurate clinical data for each patient.*

CD4 documented and other lab result at ART initiation

Table 3-9 shows that 98% had CD4 documented at ART initiation and the median CD4 within 15 months of ART initiation was 246 cells/mm^3.85%, 74% and 83% had baseline Hb, creatinine clearance and ALT results respectively. Of the 76% with HBsAg result ever documented, about 11% had a positive result. Figure 3-12 illustrates that while the majority of patients (53%) initiated ART with CD4 counts in the 200-350 range; about 37% of patients initiated ART with CD4 less than 200.

CD4 and VL documentation

73% had CD4 documented within 15 months of ART initiation while 69% had VL documented within 9 months of ART initiation. 95% had an initial VL result documented at any point and 75% had an initial VL result less than 1000 within 9 months (including target not detected).

Table 3-9 Chart Review: Adults on ART between 1-2 years (N=208): Patient Care

Variable	Source document* n (%)
Female	133 (64%)
CD4 documented at ART initiation	203 (98%)
CD4 range (cells/mm^3)	8 – 687
CD4 median (cells/mm^3)	246
<100	26 (13%)
100-199	48 (24%)
200-349	108 (53%)
350-499	17 (8%)
>500	4 (2%)
Other indication for ART initiation (Yes)	72 (35%)
Hb or Hct at baseline (Yes)	176 (85%)
Creatinine clearance at baseline (Yes)	154 (74%)
ALT at baseline (Yes)	170 (83%)
HBsAg at baseline (Yes)	114 (67%)
If Yes, HBsAg result positive	12 (11%)
HBsAg ever documented (Yes)	129 (76%)
If Yes, HBsAg result positive	10 (11%)
CD4 and VL documentation	
CD4 documented within 15 months of ART initiation (Yes)	152 (73%)
CD4 range (cells/mm^3)	8 – 687
CD4 median (cells/mm^3)	246
VL documented within 9 months of ART initiation (Yes)	144 (69%)
Less than 50 (including target not detected)	36 (25%)
Less than 400 (including target not detected)	83 (58%)
Less than 1000 (including target not detected)	108 (75%)
Follow up VL	14 (13%)
Greater than or equal to 1000	36 (25%)
Follow up VL	7 (19%)
Greater than or equal to 5000	7 (5%)
CD4 or VL documented at baseline (Yes)	175 (84%)
Viral load (not time sensitive)	
Initial VL (not time sensitive)	198 (95%)
Less than 50 (including target not detected)	60 (30%)
Less than 400 (including target not detected)	124 (63%)
Less than 1000 (including target not detected)	152 (77%)
Greater than or equal to 1000	46 (23%)
Greater than or equal to 5000	12 (6%)
2nd VL (not time sensitive)	143 (69%)
Less than 50 (including target not detected)	84 (59%)
Less than 400 (including target not detected)	110 (77%)
Less than 1000 (including target not detected)	123 (86%)
Greater than or equal to 1000	20 (14%)
Greater than or equal to 5000	10 (7%)
3rd VL (not time sensitive)	32 (15%)
Less than 50 (including target not detected)	22 (69%)
Less than 400 (including target not detected)	28 (88%)
Less than 1000 (including target not detected)	29 (91%)
Greater than or equal to 1000	3 (9%)

Variable	Source document* n (%)
Greater than or equal to 5000	0 (0%)
4th VL (not time sensitive)	3 (1%)
Less than 50 (including target not detected)	2 (67%)
Less than 400 (including target not detected)	2 (67%)
Less than 1000 (including target not detected)	2 (67%)
Greater than or equal to 1000	1 (33%)
Greater than or equal to 5000	1 (33%)
Last VL was conducted within the past year+	122 (59%)
Less than 50 (including target not detected)	94 (77%)
Less than 400 (including target not detected)	109 (89%)
Less than 1000 (including target not detected)	115 (94%)
Greater than or equal to 1000	7 (6%)
Greater than or equal to 5000	4 (3%)
Documentation	
Review of side effects (Yes)	195 (95%)
Adherence support (Yes)**	204 (99%)
Receipt of cotrimoxazole (Yes)	198 (99%)
Receipt of at least 3 prevention services (Yes)***	63 (30%)
TB screening (Yes)	200 (97%)
If Yes, TB screen result positive	5 (2%)
IPT prophylaxis (Y/N)****	81 (45%)
IPT prophylaxis (NA)*****	14 (8%)

* N values differ due to missing data

**Site has documentation of all three adherence support elements

*** Site has documentation of delivery of, or referral to, at least three of the six HIV prevention messages and services (risk reduction counseling, condom provision, adherence counseling, partner HIV testing and counseling, STI diagnosis/treatment, contraception/ safer pregnancy counseling and provision)

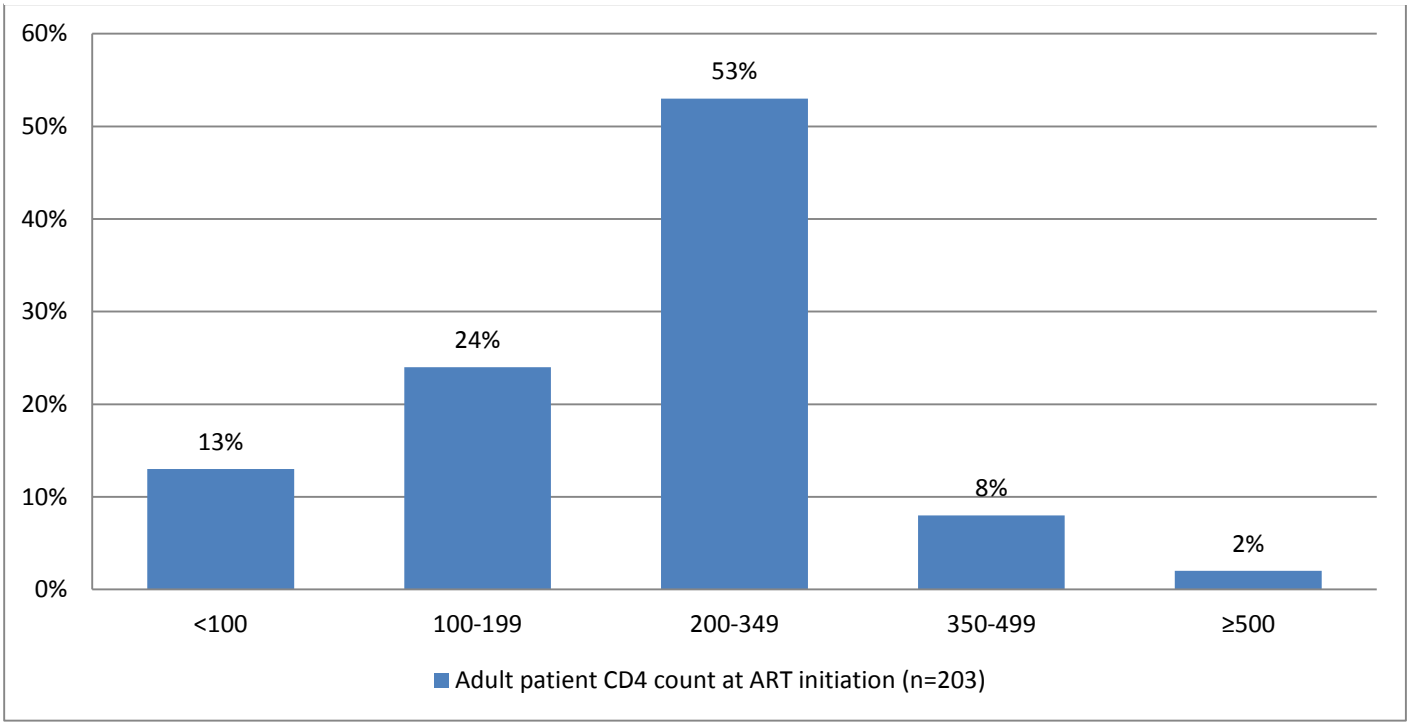
****Site has documentation that newly enrolled HIV patients who screen negative for active TB are given IPT

*****Only four sites had documentation of IPT Prophylaxis not available (NA) due to current/ prior IPT or TB Rx, therefore this percentage may be an underrepresentation of the total percentage among all sites

+ Viral load was conducted and documented between December 1, 2013 and November 30, 2014.

3.17Adult patient CD4 count (cells/mm^3) at ART initiation

Figure 3-12 Adult Patient CD4 count (cells/mm3) at ART initiation (N=203)



Error! Reference source not found. Shows that at ART initiation the majority (90%) of patients had a CD4 of less than 350 with the largest proportion (53%) of these in the 200-349 category. Only 10% of Adult patients were initiated on ART with a CD4> 350.

3.18 Chart Review: Pediatric Patients on ART between 1-2 years: Patient care

Error! Reference source not found. below shows that similar to adults, the majority (96%) of pediatric patients had a CD4 at ART initiation.79% had a viral load performed within the last year of the site visit and 62% had VL less than 1000 (including target not detected).Also similar to adult care, 96% had CTX given and TB screening conducted at the last visit .While 51% had appropriate growth monitoring at the last visit, only 8% had nutritional assessment used to categorize nutrition status.

Table 3-10 Chart Review of Pediatric Patients at Least 6 months (N=116) Patient Care

Female	65 (56%)
Age at ART initiation Range Median Under 2 years 2 to <5 years 5 to <10 years 10 to <15 years	 0.2 – 12.4 years 4.8 years 32 (28%) 28 (24%) 42 (36%) 14 (12%)
CD4 count at ART initiation (age ≥5 yrs)	54 (96%)
Last VL was conducted within the past year from site visit[+] Less than 400 (including target not detected) Less than 1000 (including target not detected) Greater than or equal to 1000 Greater than or equal to 5000	92 (79%) 61 (68%*) 62 (69%*) 28 (31%*) 18 (20%*)
Documentation at last clinical assessment:	**Source document N (%)**
Cotrimoxazole given at last visit	110 (96%)
Appropriate growth monitoring at last visit	54 (51%)
Nutrition assessment used to categorize nutrition status	8 (8%)
TB screening at last visit	112 (96%)
SOURCE: Source document site-level data from the source document was used for 13 sites (N=116). The source document* is patient booklet for seven (7) sites: Engela; Katima Mulilo; Katutura Health Centre; Katutura Int Hospital; Onandjokwe; Nankudu; and Rundu; and combined data from patient booklet and ePMS for six (6) sites: Okalongo Health Centre; Ongwediva Health Centre; Oshakati; Oshikuku; Outapi; and Tsandi. Data collection in these 6 sites was conducted in such a way that a distinction could not be made for the data source (ePMS versus patient booklet). The source document was used to give the most accurate clinical data for each patient.*	
[+] Viral load was conducted and documented between December 1, 2013 and November 30, 2014. * Denominator = 90 (number of patients with VL value) as Oshakati has two VL dates without VL values documented	

3.19 First VL Value Of Adult ART Patients by Site and Region

Table 3-11 below shows that 69% (144) of the 208 adults initiated on ART in the assessed facilities received viral load measurement within 9 months of treatment initiation. While the highest rate of VL measurement (80-100%) were seen in Ohangwena, Khomas and Oshana regions, the lowest rates (20-50%) were seen in Zambezi, Kavango and Omusati regions. 75% (108) of those who received viral load measurement achieved suppression (<1000 copies/ml of blood). Highest (92-100%) VL suppression was seen in Kavango and Oshana regions and lowest (<50%) in Zambezi and Ohangwena regions.

Table 3-11 First VL Value (% within 9 months of ART by Site and Region (N=208) initiation) of Adult ART Patients

Region	Total (n %)	VL < 1000 n (%)	VL > 1000 n (%)	Site (N=15)	Total (n %)	VL < 1000 n (%)	VL > 1000 n (%)
Ohangwena (N=15)	**15 (100%)**	7 (47%)	8 (53%)	Engela	**15 (100%)**	7 (47%)	8 (53%)
Zambezi (N=15)	**3 (20%)**	1 (33%)	2 (67%)	Katima Mulilo	**3 (20%)**	1 (33%)	2 (67%)
Khomas (N=45)	**40 (89%)**	33 (83%)	7 (18%)	Katutura HC	**14 (93%)**	12 (86%)	2 (14%)
				Katutura Hospital	**12 (80%)**	10 (83%)	2 (17%)
				Khomasdal HC	**14 (93%)**	11 (79%)	3 (21%)
Kavango (n=14)	**10 (71%)**	7 (70%)	3 (30%)	Nankudu (N=14)	**10 (71%)**	7 (70%)	3 (30%)
Omusati (n=30)	**20 (67%)**	14 (70%)	6 (30%)	Okalongo HC	**10 (67%)**	5 (50%)	5 (50%)
				Tsandi	**10 (67%)**	9 (90%)	1 (10%)
Oshikoto (n=15)	**11 (73%)**	8 (73%)	3 (27%)	Onandjokwe	**11 (73%)**	8 (73%)	3 (27%)
Oshana (n=30)	**24 (80%)**	22 (92%)	2 (17%)	Ongwediva HC	**12 (80%)**	10 (83%)	2 (17%)
				Oshakati	**12 (80%)**	12 (100%)	0 (0%)
Omusati (n=30)	**15 (50%)**	10 (67%)	5 (33%)	Oshikuku	**6 (40%)**	3 (50%)	3 (50%)
				Outapi	**9 (60%)**	7 (78%)	2 (22%)
Kavango (n=14)	**6 (43%)**	6 (100%)	0 (0%)	Rundu (N=14)	**6 (43%)**	6 (100%)	0 (0%)
TOTAL	**144 (69%)**	**108 (75%)**	**36 (25%)**	**TOTAL**	**144 (69%)**	**108 (75%)**	**36 (25%)**

3.20 Last VL Value of Adult ART Patients by Site and Region

NOTE: The following tables (Tables 3-11 to 3-12) look at VL data collected for each patient. "Initial VL" is defined as the patient's first VL (regardless of when it occurred), "Last VL" or "f/u VL" is defined as the patient's most recent VL (regardless of when it occurred).

Table 3-12 shows that 115 (94%) of the 122 adult patients with a last viral load conducted between Dec 1 2013 and November 30 2014 had viral load suppression.

Table 3-12 Last VL Value (% between Dec1 2013 and Nov 30 2014) of Adult ART Patients by Site and region

Region	Total (n %)	VL < 1000 n (%)	VL > 1000 n (%)	Site	Total (n %)	VL < 1000 n (%)	VL > 1000 n (%)
Ohangwena (N=15)	**8 (53%)**	6 (75%)	2 (25%)	Engela	**8 (53%)**	6 (75%)	2 (25%)
Zambezi (N=15)	**5 (33%)**	5 (100%)	0 (0%)	Katima Mulilo	**5 (33%)**	5 (100%)	0 (0%)
Khomas (N=45)	**27 (60%)**	27 (100%)	0 (0%)	Katutura HC	**11 (73%)**	11 (100%)	0 (0%)
				Katutura Hospital	**5 (33%)**	5 (100%)	0 (0%)
				Khomasdal HC	**11 (73%)**	11 (100%)	0 (0%)
Kavango (n=14)	**6 (43%)**	6 (100%)	0 (0%)	Nankudu (N=14)	**6 (43%)**	6 (100%)	0 (0%)
Omusati (n=30)	**20 (67%)**	18 (90%)	2 (10%)	Okalongo HC	**9 (60%)**	8 (89%)	1 (11%)
				Tsandi	**11 (73%)**	10 (91%)	1 (9%)
Oshikoto (n=15)	**6 (40%)**	6 (100%)	0 (0%)	Onandjokwe	**6 (40%)**	6 (100%)	0 (0%)
Oshana (n=30)	**24 (80%)**	24 (100%)	0 (0%)	Ongwediva HC	**12 (80%)**	12 (100%)	0 (0%)
				Oshakati	**12 (80%)**	12 (100%)	0 (0%)
Omusati (n=30)	**15 (50%)**	14 (93%)	1 (7%)	Oshikuku	**5 (33%)**	4 (80%)	1 (20%)
				Outapi	**10 (67%)**	10 (100%)	0 (0%)
Kavango (n=14)	**11 (73%)**	9 (82%)	2 (18%)	Rundu (N=14)	**11 (73%)**	9 (82%)	2 (18%)
TOTAL	**122 (59%)**	**115 (94%)**	**7 (6%)**	**TOTAL**	**122 (59%)**	**115 (94%)**	**7 (6%)**

3.21 Last VL Value of Pediatric ART Patients by Site and Region

***Table** 7-4* in the appendices section shows that of the total 116 pediatric (0-14 years) patient charts reviewed, 92 (79%) had viral load measurement done within 8-12 months after ART initiation. 69% (62 out of 90) of those children who had VL measurement at 8-12 months after ART initiation also showed suppression (<1000 copies/ml of blood). The highest suppression rate was seen in Khomas region (83%) and the lowest was in Kavango region (0%).

3.22: Characteristics of Adult ART Patients Viral Load

Table 7-5 in the appendices shows that 76.8% (152) of the 198 adults who had VL measurement (within 8-12 months) showed suppression (<1000 copies/ml of blood).74% (34) of the 42 who failed to suppress their viral load during the first VL measurement had second round VL measurement which according to the ART guideline was expected to be done within 3 months. Accordingly, 28 (76.5%) of them showed suppression (<1000 copies/ml of blood).

4 DISCUSSION

4.1 Care and Treatment: Adult, Adolescent and Pediatric

The assessment showed that among the 15 sites which were surveyed, few sites keep a daily record of scheduled patients. There was no system of tracking or following up after a patient misses an appointment *(i.e. No system for ePMS/EDT missed appointments→ Social worker/community counselor/adherence nurse→ phone system/community-based patient tracking)*.Given the absence of such a system, there was therefore limited documentation of outcomes of efforts to track and return patients to care. In view of the heightened goals of retaining patients in care and achieving the viral load suppression goals of the 90:90:90 approach, it is vital for facilities to establish systems that would enable them to rapidly identify patients who miss their follow ups, be able to track them using established patient tracking mechanisms and finally be able to determine the outcomes of lost to follow up tracking efforts.

Similar to the 2014 MOHSS EWI report, the assessment also identified that ARV supply chain interruptions were experienced as a result of rupture of the system at the national level. This probably provides the greatest risk of treatment interruption among patients on ART and may lead to emergence of HIV DR.

Retention in care is influenced by level of staff training, proximity of ART services to where clients live and limited patient waiting time at the clinic. The three most common suggestions made by health workers on ways to improve patient retention in care were reducing waiting time in clinics, strengthening staff training and expansion of ART services to where they are needed most. Strategies to implement these interventions will need to be supported by the MOHSS and partners.

With regards to pediatric care and treatment; the most worrying finding was that routine Provider Initiated Testing and Counseling (PITC) was not performed or documented for inpatients. Given the likelihood of high positivity rates among admitted pediatric patients, and the high HIV-associated morbidity and mortality among these age groups, it is critical that steps should be taken to strengthen the implementation of pediatric testing through PITC.

On M&E for pediatric care and treatment, the assessment noted that there was poor documentation of children's heights, BMI and nutritional assessment partly due to the old design of patient care booklets. However the new patient charts and ePMS is expected to improve documentation practices.

Lastly it was generally noted that there was poor communication and weak linkages between community groups and health care facilities.

4.2 Food and Nutrition/Pediatric growth monitoring

Completing an anthropometric assessment at each clinic visit and documenting results is an essential element in comprehensive HIV care and treatment as growth faltering can be the first sign of ART failure or other undiagnosed illnesses among children living with HIV. The Namibian Nutritional Guideline also recommends that all HIV infected children attending the ART clinic should undergo anthropometric assessment to categorize their nutritional status. The assessment showed that 77% of the sites did not have documentation of anthropometric assessment (i.e. weight and length or height, BMI, MUAC, or growth monitoring curve) during the last clinical visit per national guideline (Section 3.4).As part of the broader efforts to improve data quality and completeness, program managers and health providers should improve efforts to ensure improvement in this area of pediatric clinical care.

4.3 Adult and Pediatric care and support

Key findings of the assessment in this domain were that few community groups remain active and in cases in which such services were available, staff not aware of the available resources.Furthermore the assessment identified that there was generally poor communication and weak linkages between community groups and health care facilities. Attaining the 90:90:90 goals is dependent on close cooperation between health facilities and community-based services. This is therefore and area which will require additional strengthening. Operationalizing activities spelt out in **Objective 7.3.6** of the MOHSS Treatment Operational Plan will go a long way in addressing these challenges. The main activities proposed under that objective include:

- Create an enabling environment for meaningful participation of PLHIV in comprehensive HIV and AIDS care, including ART
- Recruit, motivate and retain community health workers
- Develop appropriate IEC materials to support HIV care and treatment programme targeting different population groups including the disabled persons
- Build the capacity of non-health personnel to support ART delivery
- Provide community home -based care services including bi-directional referral

4.4 Laboratory

Most facilities (50-86%) provide basic TB/HIV related lab services on site. At the time of the assessment VL is done at central NIP lab in Windhoek for all sites except for 2 sites. Almost all TB/HIV lab services were provided at all clinic hours.TB/HIV testing interruptions were reportedly common and were strongly linked to supply shortage, equipment failure, staff shortage, and stock out/expiry of testing kits.

Although Meditech database allows efficient specimen management, processing and reporting of results, there was lack of strong data linkage with the national ART management system (the ePMS) causing frequent loss of lab results and/or delayed acquisition by the care provider in order to manage patients based on the results

4.5 Medication management

It was encouraging to note that the current medication management system was adequately documented, reviewed and updated in order to minimize problems of drug stock-out and need for frequent emergency supply requests.

4.6 TB/ HIV

According to the National TB/HIV guideline, all sites should have a protocol for performing and documenting screening for active tuberculosis (TB) at each clinical visit for all HIV-infected patients. There is still an important gap to fill in this regard as about 20% of the sites lacked a combination of essential resources (SOPs and screening algorithms) and failed to provide TB screening services to all eligible patients. All HIV-positive patients who screen negative for active TB should receive IPT per national guidelines.

4.7 Site performance management (ART) and QM/QI system

There were major challenges in supervisory support visit provided to ART sites which can negatively influence quality of service delivery and staff motivation.In general sites reported poor supportive supervision with written feedback to most facilities. In addition there was poor HIV QM/QI systems at most facilities visited as well as poor assessment and utilization of site level data by facility teams for program improvement.

4.8 ART Monitoring

While all sites reported that adherence counseling was provided by a trained counselor, the majority of providers were last trained more than 5 years ago. Providers requested more training, job aids and additional staff to enable sites to improve the quality of adherence counseling.
Forgetting to take medicines was cited as the leading cause of poor adherence. Interventions such as SMS reminders can help ameliorate this challenge and improve adherence to treatment.
There was very good indication that ART sites are initiating patients in conformity with the national ART guideline and fewer percentage of patients had very low CD4 count at ART initiation

4.9 Patient Tracking

The assessment revealed that facility stock outs were largely driven by National level outages (Linked to the results of ARV and CTX outages in figures 1, 2 and 5).
Facilities reported that patients often gave old outdated contact details during registration and often these phone numbers or addresses were not reachable once facilities were attempting to track lost patients. There is therefore a need to improve collection and regular updating of correct patient contact information to enable easy follow up when patients fail to come for follow up. Providers who were interviewed cited transportation as a major reason for patients missing their appointments; further highlighting the need to decentralize services to as close to where patients stay as possible.

4.10 Facility linkage to community care and support services

As highlighted before in this report in Section 4.3, there were challenges with limited availability of community services and many sites are not actively referring patients for services outside the facilities due to this limitation. Operationalizing activities spelt out in **Objective 7.3.6** of the MOHSS Treatment Operational Plan will go a long way in addressing some of these challenges.

4.11 Facility Staffing for ART care and support services

Assessment of staffing at the various clinics revealed that nurses and lay counselors are the major staff in ART facilities. There was a notable absence of social workers noted in many facilities.

There were also notable disparities' in distribution of available staff resources between sites noted (doctors, registered nurses and data clerks) for ART services. For instance; one doctor in Onandjokwe oversees 4 times his counterpart in Oshakati and more than 18 times the number of patients overseen by a counterpart in Khomasdal Health Centre. Similarly a registered nurse in Outapi is responsible for almost 10 times more patients than a counterpart in Ongwediva Health Centre.

With respect to data clerks, the disparities are not as marked as for clinical staff with the majority of sites showing that each data clerk manages about 1500-2000 patient. However a data clerk in Okalongo is responsible for managing 2800 patient files which is about 3.5 times that of a counterpart in Khomasdal HC.

Most registered nurses and doctors were trained in adult ART but major gaps in training exist among pharmacists and enrolled nurses. However major gaps exist in pediatric ART training across all types of cadres.

While a significant proportion of lay counselors reported being trained in adherence counselling-the majority of all other cadres had not received formal training in ART adherence counselling.

With regards to data management, about two thirds of data clerks had formally been trained but a tiny proportion (less than 15%) of all other clinical staff had received formal training on that topic. Given that nurses are taking more and more of data entry through NIMART expansion, it will be important to target greater numbers of clinical staff in data management trainings.

Data suggests rapid turnover of physicians and pharmacists in the ART sites with only about 30% of these cadres having served in the sites for more than 2 years. This is likely linked to the general shortage of these cadres across the hospital services such that many are rotated from ART services to other divisions.

Registered nurses provide some continuity in the sites with about 52% reporting having been at the sites for more than 2 years .Data clerks, lab technicians and lay counselors had the least turnover with majority having served the sites for 2-5 years or more.

This data showing rapid turnover of physicians and pharmacists from ART sites but more stability among nurses and other cadres further supports the GRN strategy of scaling up NIMART which aims to build the capacity of registered nurses to initiate and manage ART patients.

4.12 Chart Review: Adults on ART between 1-2 years and Pediatric Patients at least 6 months: Data validation and quality Chart

The biggest concern with findings on data quality and validation was that overall the ePMS showed significantly incomplete documentation of lab results compared to data available within the PCBs. The greatest disparity in documenting lab results was with VL results. Only half of the patients who had a VL result recorded in the PCB, had the result also captured in the ePMS (72% vs 36% receptively). This potentially has significant implications in our capacity to accurately monitor programmatic VL outcomes (the last 90 in the 90:90:90) using ePMS data.

4.13 Review: Adults and Pediatric on ART between 1-2 years: Patient care

Comparisons showed that PCB and ePMS data variables were similar at initiation. However follow up data variables more complete in PCB than in ePMS with up to 30% incomplete data in the ePMS compared to the PCB.

As described earlier pediatric nutritional assessments to categorize nutritional status were not routinely done.There were gaps in VL testing with <80% of patients receiving VL testing within the recommended periods per the national guidelines. Furthermore there were major gaps in viral load suppression rates (<70%) among pediatrics indicating additional efforts are required to reach the 90% suppression rates targeted per the 90:90:90 approach.

On a more positive note, the assessment revealed high rates of CTX prophylaxis and TB screening.

4.14 Viral Load Results

Although the VL measurements rate (69%) observed through adult patient chart review were not very low, similar data extracted from ePMS revealed that only 37% of the eligible patients received this service; pointing towards major gaps in data quality. Three-fourth (75%) of adult patients who received VL measurement within 6-9 months of ART initiation achieved suppression, which is not very high given the target of reaching 90% suppression rates.

The 15 sites assessed showed wide range of variation in average VL suppression rates which entails differences in the level of quality of care and/or treatment adherence.

The difference in the rate of VL measurement at 9 months (69%) and 8 to 12 months after ART initiation (76.8%) points towards potential challenges in longer laboratory turn-around time or delays in documentation of results. The high levels of viral suppression after second VL measurement indicates that adherence is an important challenge in ART programs and once adherence is provided, the majority of patients are able to reach VL suppression.

More worryingly, the VL measurement and suppression rates for pediatric patients are significantly lower than for adults. This phenomenon points to serious gap in pediatric ART outcomes and possibly the quality of ART care among children. As in the case with adult patients, there was significant difference in the rate of VL measurements at 9 months (50%) and 8 to 12 months after ART initiation (79%) indicating same problems relating to either delayed performance of viral load tests by providers; longer laboratory turn-around time or delays in documentation of results. This will require ongoing further investigation by providers and mentors at individual facility level in order to come up with strategies for improving VL testing rates.

5 RECOMMENDATIONS

5.1 Care and Treatment: Adult, Adolescent and Pediatric

1 Strengthen and expand ongoing activities to track Lost To Follow Up (LTFU) patients
2 Improve patient flow organizations in ART clinics to reduce waiting times
3 Develop and implement systems (SOPs) to track and document outcomes for patients who miss scheduled visits using data (ePMS or EDT queries)
4 Improve National level Adult ARV supply chain reliability
5 Need for innovative interventions to scale up the implementation of PITC especially in children
6 Improve pediatric growth monitoring and recording of such in the patient records
7 Urgent need to support systems for facility pediatric patient linkage to community care and support

5.2 Adult and Pediatric care and support (Including Pediatric Food and Nutrition)

1 Urgent need to support systems for facility Adult patient linkage to community care and support
2 Support and sustain community services with strong linkages to health care facilities to promote adherence and retention in care
3 Monitor implementation of the MoHSS bi-directional referral system and documentation tools
4 Improve the implementation of facility-based PHDP
5 Provide training, necessary equipment/supplies and supportive supervision in order to implement the national guideline for routine growth monitoring for children living with HIV during each clinical visit.

5.3 Laboratory

1. Improve linkage and interface of the Meditech database with ePMS to ensure accurate and timely acquisition of essential laboratory test results for HIV diagnosis, care and treatment.
2. Sites need to plan to minimize and/or manage emergency situations related to TB/HIV testing interruptions
3. Essential TB/HIV lab services (CD4 test, blood chemistry, sputum microscopy, GenXpert) must be made available at main ART sites
4. There is a strong need to decentralize VL testing at least to the main ART sites

5.4 TB/ HIV

1. Improve TB screening activities through health worker training and mentoring
2. There is a need to clarify national guideline for patients who have already been given the 6-9 months INH prophylaxis
3. More healthcare worker training and awareness raising on the benefit of IPT and IPT guidelines

5.5 Site performance management (ART) and QM/QI system

1. The critical benefit of regular site-level supportive supervision must be acknowledged in ART service and necessary logistic and financial commitment must be made to implement it accordingly
2. Implement more regular site supportive supervision with written feedback
3. Strengthen support for QI/QM systems at facility level through clinical mentors, QI focal persons and coaches
4. Build site level capacity to improve data analysis and utilization for facility service improvement

5.6 Patient Tracking

1. Improve National level adult ARV supply chain reliability to prevent ART stock outs reported at site level.
2. Develop and implement systems (including SOPs) and system to track and document outcomes for patients who miss scheduled visits using data (ePMS or EDT queries) including collaboration with Community-based organizations
3. Develop and implement innovative strategies to lessen the burden of transportation on patients coming for regular clinical reviews and/or pill pick up e.g. Provide medicines for more than one month scripts for stable patients and consider other proven interventions such as Community-based ART distribution

5.7 ART Monitoring

1. While all sites reported that adherence counseling was provided by a trained counselor, the majority of providers were last trained more than 5 years ago. The recommendation is to provide refresher adherence trainings to key clinical staff who have not received updated adherence information.
2. Provide more training, job aids and additional staff to enable sites to improve the quality of adherence counseling.
3. Implement interventions such as SMS reminders can help improve adherence and retention to treatment.

5.8 Facility linkage to community care and support services

1. Conduct local mapping of currently available community services and avail the information to health facilities. This information can be used in implementing the bi-directional referral system
2. Create synergies between CBOs and the expanded Community Health Extension Worker Program to improve coverage of community services

5.9 Facility Staffing for ART care and support services

1. Considering that nurses and lay counselors are the bedrock of services in ART clinics-they should be the primary target for capacity building to ensure quality service provision.
2. Address the general shortage of social workers in most health facilities.
3. In view of general staff shortages for ART services there is need for equity (taking into account the patient load, level of facility and unique considerations of the geographic location of the site) in future staff resource distribution across the different types of staff cadres.
4. Given the limited opportunities for training, when national and regional teams are planning trainings-priority should be given to:
    - Topics that have low coverage among key staff
    - Cadres already working in ART services who are not yet trained in particular topics when local managers are selecting participants to nominate for training workshops
5. Clinical and nurse mentors should use the data on training gaps to identify topics for onsite mentoring and training. Other platforms such as Digital Video Conferencing (DVC) and ECHO should consider the data on training gaps to identify topics that can be covered through these training platforms
6. NIP to organize trainings to update Laboratory scientists on ART laboratory monitoring guidelines
7. When rotating staff-there has to be a purposeful plan to ensure that at any given time-there is always someone with experience in ART management. Ensure bridging during transitions and avoid situations where the clinic is manned by completely new staff when all experienced staff have been rotated out of the ART clinic.

5.10 Chart Review: Data validation and quality Chart

1. Overall-there is need to improve the completeness of the documentation of lab results in the ePMS
2. Given that VL results are now the pivotal lab result for monitoring both clinical and programmatic performance –there is need to:
    a. Ensure that these VL results data are completely documented and validated in both the PCBs and the ePMS.
    b. Strengthen strategies to enhance data completeness in the ePMS during patient follow up visits
    c. Provide mentorship to sites and implement QI to improve site performance in utilizing pediatric nutritional assessments for categorizing pediatric nutritional status

5.11 Viral Load Monitoring and Outcomes

1. Improve routine site-level ePMS data validation and auditing procedures
2. Conduct regular site-level performance assessment/analysis in order to identify specific problems hindering achievement of high rate of VL measurement and suppressions
3. Need for experience sharing among ART sites to disseminate best practices
4. Improve compliance with ART guideline regarding regular VL measurement
5. Reduce lab turn-around time through decentralization of VL measurement services
6. Improve adherence counseling services
7. Pediatric ART care needs to be the next priority activity in ARV program

6 LIMITATIONS

The SQA report shares very informative findings from the sites that participated in the assessment. However the key limitations are that SQA was conducted in only 14 sites so may not be representative of all major ART sites in the country. Furthermore the site selection did not include smaller, IMAI or outreach sites .There was also limited VL data at site level to make conclusive remarks especially with 3rd VL tests and outcomes.

7 APPENDICES

Table 7-1: Aggregate results of service assessment scorecard (N=14 sites)

Domain	Element	Needs urgent remediation	Needs improvement	Meets standard	Exceeds standard
Adult/Adolescent care and treatment	Patient tracking	50%	36%	0%	14%
	Adherence support	0%	0%	50%	50%
	ART monitoring adult	7%	0%	29%	64%
	Supply chain reliability (ARVs)	43%	7%	29%	21%
	Reference materials	7%	0%	14%	79%
Adult care and support	Cotrimoxazole	0%	0%	0%	100%
	Facility linkage to community care and support	100%	0%	0%	0%
	Supply Chain Reliability (CTX)	7%	0%	0%	93%
	PHDP	57%	7%	21%	14%
Food and nutrition	Pediatric growth monitoring (N=13)	77%	23%	0%	0%
Laboratory	Testing interruptions (N=12)	17%	33%	8%	42%
	Results and information management (N=12)	0%	8%	25%	67%
Medication management	Supply chain management (N=13)	0%	0%	31%	69%
	Medication dispensing	7%	7%	57%	29%
Pediatric care and treatment	Pediatric ART eligibility	0%	7%	36%	57%
	Pediatric ART monitoring	0%	14%	21%	64%
	Supply chain reliability (pediatric ARVs)	29%	14%	7%	50%
	Supply chain reliability (pediatric cotrimoxazole)	7%	0%	0%	93%
	Pediatric cotrimoxazole	0%	0%	7%	93%
	Dosing of pediatric ARVs	0%	0%	0%	100%
	Pediatric TB screening	21%	7%	14%	57%
	Routine HIV testing for children (N=12)	100%	0%	0%	0%
	Adolescent support services(N=13)	54%	8%	8%	31%
	Pediatric facility referral to community care and support services	100%	0%	0%	0%
TB/HIV	Adult/Adolescent TB screening	21%	0%	29%	50%
	Isoniazid Prevention Therapy (IPT) (N=13)	46%	23%	31%	0%
Site/performance management (ART)	Supportive supervision	50%	21%	14%	14%
Site/performance management (ART – QM/QI system)	HIV QM/QI System	29%	36%	21%	14%
	Assessment and Utilization of Performance Data	36%	50%	14%	0%

Table 7-2 ART Monitoring

Characteristic	N (%)
ART adherence measured	14 (100%)
Self-reported adherence	12 (86%)
Pill count	12 (86%)
Pharmacy refill records	6 (43%)
Other	4 (29%)
Individual who performs adherence measurement	
Provider	12 (86%)
Data clerk	1 (7%)
Community counselor	1 (7%)
Given current recommended patient booklet guidelines, adherence is difficult to measure (yes)	8 (57%)
Pill balance (under or over)*	
Not trained, difficult to quantify*	3 (43%)
Next step if patient reports missing doses of ARVs*	4 (57%)
Investigate	
Counseling	5 (36%)
Other	7 (50%)
Background of adherence counselor	2 (14%)
Community counselor	
Nurse	12 (92%)
Individual who performs adherence counseling is trained in ART adherence counseling (types include basic or refresher community or adherence counseling training*)	1 (8%)
	13 (93%)
Training in the past year	
Training more than five years ago	4 (36%)
Adherence counselor is available in ART clinic	6 (55%)
Every day	
2 days	12 (86%)
4 days	1 (7%)
Same day adherence counseling is available	1 (7%)
Adherence counseling job aids are used	12 (86%)
Adherence counseling is documented	12 (86%)
Patient booklet	14 (100%)
Patient passport	8 (57%)
Reasons patients cite poor ART adherence	6 (43%)
Forgot to take	
Other	11 (79%)
Stigma	11 (79%)
Not having food	8 (57%)
Alcohol related*	8 (57%)
Not having medications readily available	5 (36%)
Negative side effects	4 (29%)
Transportation issues*	4 (29%)
Tired of taking medication	4 (29%)
Feeling too sick	3 (21%)
Religious reasons*	2 (14%)
Challenges to delivering ART adherence counseling	2 (14%)
Managing poor adherence in children	
Healing manage patients underlying factors for poor adherence	8 (57%)
Increasing the patient's understanding of the importance of taking ART	6 (43%)
Language barriers*	4 (29%)
Physical or human resource limitations*	4 (29%)
Measuring adherence	4 (29%)
What would help provide better/ more effective adherence counseling	3 (21%)
Training	
More job aids	11 (79%)

Characteristic	N (%)
Additional human resources*	8 (57%)
Additional space, specific for adherence counseling*	7 (50%)
Another individual, other than the provider, conducts adherence counseling	3 (21%)
Community counselor	13 (93%)
Pharmacist	14 (100%)
Nurse	4 (29%)
Above individual received adherence training (answers included community and/or adherence counseling training and group trainings*)	1 (7%)
Training in the past year*	12 (92%)
Training more than five years ago*	3 (27%)
Routine information received for adherence counseling	4 (36%)
Patient booklet notes that indicate need/request for counseling	
Patient booklet notes that indicate potential barriers to adherence	7 (54%)
Patient passport notes that indicate need/request for counseling	4 (31%)
Patient passport notes that indicate potential barriers to adherence	10 (77%)
Information reviewed	6 (46%)
ART regimen	
Past visit dates	5 (38%)
Past adherence*	8 (62%)
Passport notes and referral reasons*	3 (23%)
VL history*	2 (15%)
Adherence counseling job aids are used	3 (23%)
Adherence counseling is documented	11 (85%)
Reasons patients cite poor ART adherence	11 (85%)
Transport issues*	
Other	6 (55%)
Forgot to take	6 (55%)
Not having medications readily available	5 (45%)
Not having food	4 (36%)
Don't think medications do anything	4 (36%)
Stigma	4 (36%)
Alcohol related*	3 (27%)
Tired of taking medications	3 (27%)
Negative side effects	2 (18%)
Challenges to delivering ART adherence counseling	2 (18%)
Healing manage patients underlying factors for poor adherence	
Managing poor adherence in children	5 (45%)
Language barriers*	5 (45%)
Increasing the patient's understanding of the importance of taking ART	4 (36%)
Measuring adherence	4 (36%)
What would help provide better/ more effective adherence counseling	1 (9%)
Training	
Link to community health care*	8 (73%)
More job aids	4 (36%)
Additional human resources*	3 (27%)
	2 (18%)

* Qualitative (open ended) responses and "other" responses were categorized with similar responses through inductive reasoning.

Table 7-3 Select Staffing type for ART clinic by Site

Site	Region	Current on ART	# of physicians	# of RN	# of EN	# of data clerks
Engela	Ohangwena	4889	1	4	2	3
Katima Mulilo	Zambezi	3526	0	3	1	3
Katutura Health Centre	Khomas	6144	2	6	2	3
Katutura Int Hospital	Khomas	6734	6	10	2	4
Khomasdal Health Centre	Khomas	895	2	1	0	1
Nankudu	Kavango	895	0	2	2	0
Rundu	Kavango	4318	2	4	2	2
Onandjokwe	Oshikoto	9271	1	5	3	4
Ongwediva Health Centre	Oshana	1850	0	6	4	1
Oshakati	Oshana	8127	4	6	4	5
Oshikuku	Omusati	3970	1	3	3	2
Outapi	Omusati	6822	1	3	4	3
Tsandi	Omusati	1630	1	3	0	1
Okalongo Health Centre	Omusati	2899	0	5	4	1

Figure 7-1 Current ART Regimen Types in Adult Patients

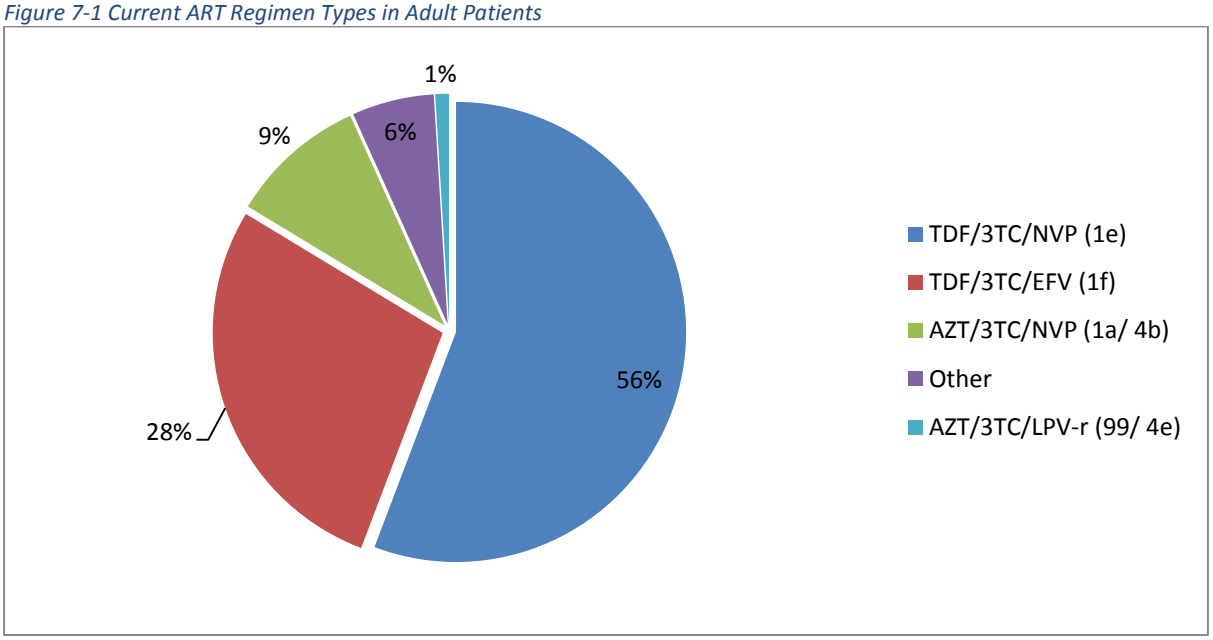


Figure 7-2 Current ART Regimen Types (%) in Pediatric Patients

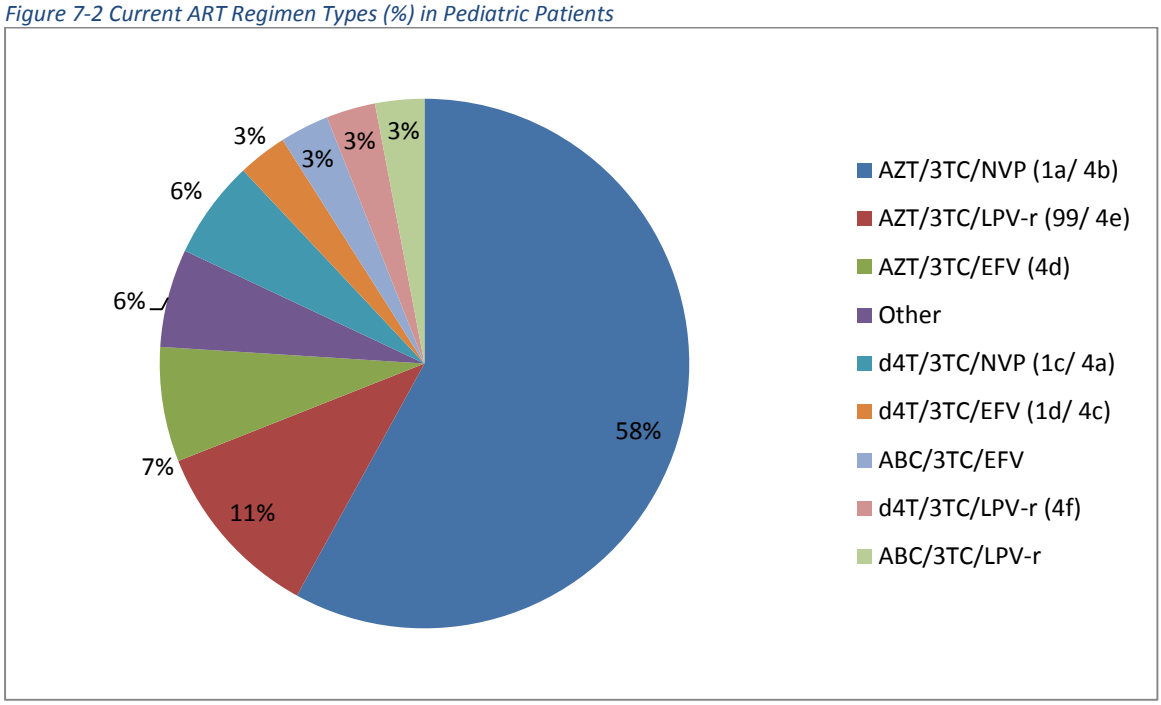


Table 7-4 : Last VL value (1 Dec 2013 to 30 Nov 2014) of Pediatric ART Patients by Site and Region (N=116)

Region	TOTAL VL within past 12m	VL < 1000 n (%)	VL > 1000 n (%)	Site	TOTAL VL within past 12m	VL < 1000 n (%)	VL > 1000 n (%)
Ohangwena (N=10)	7 (70%)	4 (57%)	3 (43%)	Engela	7 (70%)	4 (57%)	3 (43%)
Zambezi (N=10)	4 (40%)	3 (75%)	1 (25%)	Katima Mulilo	4 (40%)	3 (75%)	1 (25%)
Khomas (N=20)	18 (90%)	15 (83%)	3 (17%)	Katutura HC	8 (80%)	8 (100%)	0 (0%)
				Katutura Hospital	10 (100%)	7 (70%)	3 (30%)
				Khomasdal HC (N=0)	-	-	-
Kavango (N=2)	2 (100%)	0 (0%)	2 (100%)	Nankudu (N=2)	2 (100%)	0 (0%)	2 (100%)
Omusati (N=20)	14 (70%)	9 (64%)	5 (36%)	Okalongo HC	7 (70%)	5 (71%)	2 (29%)
				Tsandi	7 (70%)	4 (57%)	3 (43%)
Oshikoto (N=10)	9 (90%)	5 (56%)	4 (44%)	Onandjokwe	9 (90%)	5 (56%)	4 (44%)
Oshana* (N=14)	14 (100%)	10 (71%)	2 (29%)	Ongwediva HC (N=5)	5 (100%)	3 (60%)	2 (40%)
				Oshakati (N=9)*	9 (100%)	7 (78%)	0 (0%)
Omusati (N=20)	14 (70%)	9 (64%)	5 (36%)	Oshikuku	8 (80%)	5 (63%)	3 (38%)
				Outapi	6 (60%)	4 (67%)	2 (33%)
Kavango (N=10)	10 (100%)	7 (70%)	3 (30%)	Rundu	10 (100%)	7 (70%)	3 (30%)
TOTAL	**92 (79%)**	**62 (69%⁺)**	**28 (31%⁺)**	**TOTAL**	**92 (79%)**	**62 (69%⁺)**	**28 (31%⁺)**

* Oshakati had documented VL dates but no documented VL value

⁺ Denominator = 90 (number of patients with VL value)

Table 7-5 Viral Load Outcomes of Adult Patients with Repeat VL Results

-	**Last VL is <1000 (row %)**	**Last VL is ≥ 1000 (row %)**	**No f/u VL (row %)**	**TOTAL (column %)**
Initial VL <1000	103 (68%)	6 (4%)	43 (28%)	152 (73%)
Initial VL ≥1000	28 (61%)	6 (13%)	12 (26%)	46 (22%)
No Initial VL	-	-	10 (100%)	10 (5%)
TOTAL (row %)	131 (63%)	12 (6%)	65 (31%)	208