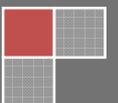


2013

Assessment of feasibility and acceptability of nurse-led initiation of anti-retroviral therapy

Formative Research for the Eliminating Paediatric AIDS in Zimbabwe project, Study 1



This is a report of formative research conducted in 2013 as part of the Eliminating Paediatric AIDS in Zimbabwe (EPAZ) project. EPAZ is a four-year (2012-16) implementation research project under the auspices of the World Health Organisation and the Ministry of Health and Child Welfare, Zimbabwe, one of six projects in Zimbabwe, Malawi and Nigeria that are part of the INSPIRE (INtegrating and Scaling up PMTCT through Implementation Research) initiative administered by WHO with support from the Canadian International Development Agency.

Three research studies were conducted through the formative research conducted by EPAZ:

1. *Assessment of feasibility and acceptability of nurse-led initiation of anti-retroviral therapy*
2. *The design of clinic-based mother support groups to enhance retention in PMTCT programmes*
3. *Unpacking loss to follow-up issues in a rural PMTCT programme context*

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Executive Summary

The Ministry of Health and Child Welfare initiated its anti-retroviral treatment (ART) programme in 2004. By 2012 85% of eligible adult and 40% of eligible paediatric patients were receiving ART. In February 2013, Zimbabwe adopted a new policy that all pregnant and breastfeeding mothers should receive lifelong ART regardless of their stage of disease or CD4 count. ART initiation by doctors is failing to meet universal access targets leading to continued high HIV vertical transmission rates and unnecessary loss of lives. The Ministry of Health and Child Welfare (MOHCW) has promoted a task shifting exercise, which sees nurses spearheading ART initiation. But the implementation of this strategy is hampered by the lack of a clearly stated policy on nurse-led initiation (NLI) and uncertainty about how this policy might be implemented. Whilst nurses in some health facilities initiate ART, this practice is by no means universal.

This study aimed to assess whether it is acceptable amongst nurses to start ART in pregnant and paediatric patients and determine the feasibility of nurse led initiation (NLI) of ART. The study was part of the Eliminating Paediatric AIDS in Zimbabwe project, a four year prevention of mother-to-child transmission (PMTCT) implementation research study.

The study was conducted in Makoni and Mutare districts in Manicaland province in 2013. A desk review of national health policies and strategies on ART management was conducted. Out of a total of 101 health facilities in the two districts, 50 were randomly selected for inclusion, with 25 centres coming from each district. Convenience sampling of one nurse from each study clinic was conducted for interviews. Data was entered into Epi-Info which was used for analysis of quantitative data and descriptive statistics were generated.

Results: 47 nurse interviews and 6 key informant interviews were conducted. Currently paediatric patients are being initiated on ART by doctors only; 11 (23.4%) of the nurses interviewed initiated adult patients on ART; 42 (89 %) of the nurses saw it as acceptable for nurses to start ART in both adults and paediatric patients; 47 (100%) of the nurses thought it was feasible for NLI of ART. Although the MOHCW has publicly stated that NLI of ART should be conducted, no policy documents guiding this policy have been published and there has been no official communication to district or provincial managers of this policy. The Nurse's council of Zimbabwe (NCZ) responsible for providing guidelines on nursing duties had not yet approved the policy of NLI of ART.

Conclusions: If Zimbabwe's elimination of mother-to-child transmission targets are to be achieved, it is essential that NLI of ART in pregnant and paediatric patients be increased. The study found that it was acceptable that nurses should initiate ART in HIV positive paediatric and pregnant patients. But for NLI of ART to be feasible, the MOHCW must engage with the NCZ which can authorise nurses to initiate patients on ART. It may then develop and disseminate the new policy which will guide implementation. These policy initiatives are essential if Zimbabwe is to achieve its elimination of new paediatric HIV infections target by 2015.

Key words: nurse-led, antiretroviral therapy, feasibility, acceptability

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Acronyms

AIDS	Acquired Immunodeficiency Syndrome
ART	Antiretroviral therapy
ARVs	Antiretrovirals
AZT	Azidothymidine
DHE	District Health Executive
DMO	District Medical Officer
DNA-PCR	Deoxyribonucleic Acid Polymerase Chain Reaction
DNO	District Nursing Officer
EID	Early Infant Diagnosis
eMTCT	Elimination of Mother to Child Transmission
HAART	Highly Active Antiretroviral Therapy
HIV	Human Immunodeficiency Virus
HCT	HIV Counselling and Testing
IYCF	Infant and Young Child Feeding
LTFU	Lost to Follow Up
MER 14	More Efficacious Regimens 14
MOHCW	Ministry of Health and Child Welfare
MPH	Mutare Provincial Hospital
MRCZ	Medical Research Council of Zimbabwe
MTCT	Mother to Child Transmission
NGO	Non-Governmental Organisation
NLI	Nurse Led Initiation
NLI-ART	Nurse Led Initiation of ART
NMRL	National Microbiology Reference Laboratory
NVP	Nevirapine
PCC	Primary Care Counsellor
PCN	Primary Care Nurse
PLHIV	People Living with HIV
PMD	Provincial Medical Director
PMTCT	Prevention of Mother to Child Transmission
PNO	Provincial Nursing Officer
RGN	Registered General Nurse
sd-NVP	Single dose Nevirapine
TDF	Tenofovir
VHW	Village Health Worker
WHO	World Health Organisation
ZDV	Zidovudine

CHAPTER 1: INTRODUCTION

1.1. Background

The Ministry of Health & Child Welfare (MOHCW) in Zimbabwe introduced the Opportunistic Infections and Antiretroviral Therapy (OI/ART) programme in April 2004 as part of its commitment to the provision of comprehensive HIV and AIDS care services. Although the ART coverage has improved, now at an estimated 85% in the adult population this short of the universal access target¹. The coverage with ART initiation services has therefore remained and is bound to remain low for a long time before the number of doctors and clinical officers increase. Currently there is very limited ART initiation by nurses in Zimbabwe. The inadequate initiation capacity has failed to meet the ever increasing demand for ART, leading to the long waiting lists at ART sites and unnecessary loss of life.

According to the World Health Organization expanding access to antiretroviral therapy (ART) to treat HIV in low-resource settings has demonstrated benefits in terms of health and survival. Contrary to earlier claims, high levels of treatment adherence have been reached. As antiretroviral drug prices have fallen, the key constraint to delivering treatment has become human resources. Human-resource capacity is generally weak in resource-constrained settings, particularly in sub-Saharan Africa, and some evidence suggests that ART delivery scale-up could fail on these grounds alone. Under the District Medical Officers' (DMO) supervision, nurses at first level health facilities and at the district clinic level can be trained to initiate first-line ART regimens in patients who do not have complicating conditions (Miles et al., 2006). They can also be trained to provide clinical monitoring, respond to new signs and symptoms, dispense medications and arrange follow-up. Nurses can refer patients to medical clinicians at the district level when treatment does not seem to control the disease or when there is severe toxicity and illness.

Evidence from North America, where HIV care has been provided by nurse practitioners since the early 1990s, suggests that in comparisons between nurse-led and physician-led HIV outpatient care, the quality of care and patients' satisfaction are equivalent². Physicians will have to play a lead role in assessing people living with HIV/AIDS, switching to second line therapy, managing serious conditions and supervising staff; whilst nurses play a lead role in initiation of first line therapy. WHO's guidelines on delivering ART in low-resource settings, state that the initiation of first-line treatment for HIV/AIDS and management of follow-up can be considered relatively straightforward for a significant proportion of individuals³. If there are objective criteria to assess eligible candidates (for example, CD4 count and WHO Clinical staging) and clear guidance for follow-up, it seems reasonable that it may not always be essential that a medically trained person initiates treatment and manages follow-up consultations.

¹ UNAIDS, 2010. Global Report 2010. www.unaids.org/documents/20101123_GlobalReport_Chap4_em.pdf

² Wilson IB, BE Landon, LR Hirschhorn, K McInnes, L Ding, PV Marsden, et al. *Quality of HIV care provided by nurse practitioners, physician assistants, and physicians*. Ann Intern Med 2005; 143: 729-36.

³ WHO, 2004. *Scaling up antiretroviral therapy in resource-limited settings: treatment guidelines for a public health approach* (2003 revision). Geneva.

At present, ART delivery in Manicaland province is limited to urban referral centres and large high volume rural clinics (outreach clinics), leaving many patients to travel long distances to seek treatment. In the high volume outreach sites waiting lists to start therapy sometimes exceed 3 months, primarily because of the shortage of doctors. Once patients start ART, they must endure long travelling distances for follow-up visits and medication refills, which may affect adherence to treatment especially in pregnant mothers. It thus seems unrealistic to assess all patients eligible for ART in a timely manner and manage long-term follow-up for the large number of pregnant mothers and infants requiring therapy, without encouraging the wider engagement of nursing personnel in initiating ART and providing follow-up care.

According to a study conducted by EGPAF, the percentage of HIV positive ART eligible pregnant women that were put on ART by trained nurses increased from 3% to 26% within 5 months of the study⁴. Utilization of nurses has the potential to increase access to ART, reduce congestion at centralized ART centres, reduce unnecessary travel by patients and allow for localized provision of support for adherence and education. This in turn is expected to improve retention of mother and baby pairs in the PMTCT program. When the latest PMTCT guidelines were released in June 2013, Zimbabwe adapted implementation of the option B+ as strategy of choice. Hence nurse led initiation of ART is going to be key for option B+ to be a success and achieve the same coverage as with option A.

1.2. Statement of the problem

The national ART coverage in Zimbabwe is 85% for adult and 40% for paediatric patients. HIV contributes to 26% of maternal deaths, and 41% of child mortality. For paediatric patients, ART is mostly initiated by doctors. Most ART initiation in Zimbabwe is implemented by doctors who are often overwhelmed with other duties and responsibilities. Initiation capacity in the country has failed to meet the demand leading to long waiting lists at ART initiation sites. This in turn has led to unnecessary loss of lives and high HIV vertical transmission rates. The MOHCW with its partner plans to implement a task shifting exercise, which will see trained nurses in health facilities spearhead the ART initiation program. The study seeks to establish the knowledge, attitudes and perceptions of nurses towards a nurse led ART initiation program.

1.3. Justification

The purpose of the study is to establish the factors associated with the feasibility and acceptability of task-shifting, nurse-led initiation of ART, by nurses in Makoni and Mutare district clinics. The findings of the study will be used to inform the subsequent cluster randomised control trial. The study will also inform policy on the steps to be taken to make NLI of ART a reality. Findings will also be published to increase the scope of literature on this subject since few studies on task shifting in OI/ART clinics in Zimbabwe have been published.

⁴ Muchedzi A, T. Nyamundaya, B. Makunike-Chikwinya, A. Mushavi, R. Mugwagwa (2010) *Integration of ART in MCH settings: the way forward for increasing access to ART for eligible HIV-positive pregnant women in Zimbabwe*. 6th International AIDS Society Meeting on HIV Pathogenesis, Rome, 17-20 July 2011, Abstract WEAX0203

1.4. Study Objectives

1.4.1. Broad Objective

To determine the factors associated with the feasibility and acceptability of nurse led initiation of ART in Makoni and Mutare districts.

1.4.2. Specific objectives

1. To assess national health policies, guidelines on ART management, legal framework and scope of permitted nursing practice.
2. To establish the attitudes and perceptions of nurses in Makoni and Mutare districts towards nurse led ART initiation.
3. To determine the current challenges being faced in Makoni and Mutare district clinics in the PMTCT program.
4. To come up with appropriate recommendations on how best to implement the NLI of ART.

1.5. Literature Review

The Ministry of Health and Child Welfare conducted a national review of the HIV and AIDS Treatment and Care programme in May 2008 with the objective of documenting the progress achieved so far, best practices, lessons learnt etc. Some of the key lessons learnt as it pertains to scaling up of ART services were that,

- (i) Efficient delivery of ART services does not only require adequate supply of ARVs but adequate human resources and diagnostics;
- (ii) With adequate training and mentoring nurses and clinical officers can initiate and adequately manage ART patients and
- (iii) Decentralization is an effective and efficient way to rapidly scale-up ART services and by bringing the services closer to the patient, they are more effectively followed up thus improving on adherence rate and therefore improved quality of life.

In a concept note on NLI of ART by the MOHCW nurses can initiate ART if they meet the following criterion:

- a) Nurse should have undergone the basic training course on adult and or paediatric OI/ART
- b) The nurse should have been attached for a minimum of four weeks at a centre that is accredited to initiate ART as per the national guidelines
- c) The nurse or clinical officer should hold a valid practising licence from the relevant regulatory body
- d) In addition to meeting the above criteria, the nurse or clinical officer should be recommended by the OI/ART Programme Manager of the site to initiate ART.

It is the responsibility of the district staff to provide regular mentorship and supportive supervision to the staff on site. During our study the above criteria in conjunction with other factors will be used to assess the feasibility of NLI of ART.

Nurse led initiation was found to have clinically positive outcomes⁵. Stakeholders noted that nurse led ART programs must have quality control mechanisms in place. However there were reservations noted in the quality of care, management of side effects, and risk of ART resistance when introducing NLI of ART. Nurses were found to be already initiating ART informally as they were pushed by circumstances. This study however did not assess the acceptability of NLI of ART, which is one of our study objectives.

There have been different models of nurse led ART initiation. Two models will be discussed in this review.

Model A – Khayelitsha, South Africa, Lesotho and Botswana

In the 'task shifted' roles nurses manage opportunistic infections, perform clinical staging, initiate and monitor ART, manage drug supply and supervise adherence counsellors. This model has been shown to be effective in several settings to both improve quantitative but also qualitative programmes outcomes as it allows delivery of treatment closer to home, improving adherence. One of the pre-requisites for this model to work is training and supervision. To equip nurses with the skills to meet these new responsibilities, intensive pre- and in- service training was provided on management of HIV related conditions and ART. The training comprised of one-week comprehensive training in HIV /AIDS and is repeated at least three times a year; this, together with a period of two months of intense clinical mentorship from the doctors mobile team and from more experienced clinic nurses allows a nurse, new to HIV care, to feel confident about the management of OIs and ART use⁴.

Model B: Rwanda

Shumbusho reported on a nurse led ART management model in Rwanda in which one nurse at each selected primary health care centre was trained by a doctor to: a) perform physical exams of HIV patients and to order and interpret blood tests during patient enrolment and follow-up; b) prescribe ART to noncomplex adult cases; and c) refer complex cases, including children, to the doctor. Selected nurses first received formal training in national treatment guidelines, followed by a 5-day practicum training at an established ART site and 5–10 day "bedside" training. "Bedside" training involved nurse-consultation of all HIV-positive patients (ART-eligible and non-eligible) under the observation of the doctor. After a minimum of 50 doctor-observed consultations had been completed with ART-eligible patients, nurses were allowed to consult patients independently but were provided ongoing doctor support from a distance with weekly supervision and mentoring at the PHC treatment site⁶.

⁵ Simbini T, Mpeta E. T., 2010. *Feasibility Assessment: Introduction of Nurse – Led Antiretroviral Therapy Management in ZACH related health institutions in Zimbabwe*. Harare, Zimbabwe

⁶ Shumbusho F, Griensven J, Lawrence D, Turate I, Weaver MA, Price J, Binagwaho A, 2009. *Task Shifting for Scale-up of HIV Care: Evaluation of Nurse-Centered Antiretroviral Treatment at Rural Health Centers in Rwanda*. PLoS Medicine 6 (10). Cited online [2010].

<http://www.plosmedicine.org/article/info%3Adoi%2F10.1371%2Fjournal.pmed.1000163>

HIV program scale-up has triggered innovations in nurse training and task shifting. PMTCT workshops and classroom learning do not necessarily lead to rapid implementation of nurse-initiated ART and ARV prophylaxis (I-Tech PMTCT Clinical Mentoring Toolkit). WHO introduced the clinical mentoring program to bridge the gap between classroom learning and implementation. WHO defines clinical mentoring as a system of practical training and consultation that fosters ongoing professional development to yield sustainable high-quality clinical care outcomes. Mentoring has led to improvements in basic PMTCT indicators (Morris et al, 2009). Each nurse will be assigned a mentor who will provide the necessary guidance in management of challenging clinical cases encountered on a day to day basis. Nurses may seek advice from their mentors by using SMS, phone calls or emails. Mentors will also visit their mentees at their sites regularly to provide on-the-job training. Mentoring will help convert the knowledge gained in training to practical knowledge. The mentorship program accompanies and strengthens nurse-led initiation of antiretroviral therapy.

1.6. STUDY METHODOLOGY

1.6.1. Study Design

The study methodology was both qualitative and quantitative in nature, with a cross sectional design. Primary and secondary data were collected for analysis. Secondary data was collected by review of clinic and hospital based databases, review of annual district reports and human resources establishment and training records. A desk review of the national health policies and strategies on ART management was also carried out. A review of the current training manuals was also done. In-depth semi-structured interviews were held with nurses within Makoni and Mutare district.

1.6.2. Study Sites

The study was carried out in clinics in Makoni and Mutare districts of Manicaland province, in Zimbabwe. Mutare and Makoni districts have 51 and 50 public health facilities respectively, both inclusive of primary and secondary rural health centres.

1.6.3. Study Population

The study population consisted of nurses working in the 101 public health centres within Mutare and Makoni districts.

1.6.4. Sample Size

Fifty health centres from the two districts were randomly selected for participation in the study, with 50 nurses, one from each health centre, being the sample size.

1.6.5. Sampling

1.6.5.1. *Sampling procedure*

The health centres were stratified by district, with 25 clinics being randomly selected from each district. Simple random sampling was done. At each site interviews were conducted with the nurse in charge or conveniently nurse on duty in the nurse in charge is not on duty.

1.6.5.2. Inclusion criteria

Registered General Nurses (RGN) and Primary Care Nurses (PCN) holding a valid nursing certificates working in Mutare and Makoni district will be included as part of the study.

1.6.5.3. Exclusion criteria

Participants earmarked for the study who do not consent to the study will be excluded.

1.7. Plan for Data Collection

1.7.1. Instrument or tool/s

English questionnaires will be used to guide the interviewer. See appendix B1.

1.7.2. Pre-testing

Tools were pre-tested in Mutasa district, Manicaland. Revision of the tools was done as necessitated by the recommendations from the pre-testing.

1.7.3. Data collection procedure

Data collection was done over a period of six weeks including the questionnaire pretesting period. Structured interviews with the nurses were conducted by trained enumerators. An average of three interviews was conducted per day. At the end of each day the collected data was cleaned before entry into a database for preliminary analysis.

1.8. Plan for Data Analysis

Quantitative data was processed, tabulated and analysed using Epi Info version 7 to generate frequency tables and graphs. Qualitative data analysis was done by identifying key ideas, differences and similarities, based on what was commonly mentioned in the interviews. Direct quotations were recorded to support the qualitative data generated.

1.9. Ethical considerations

Informed consent was sought before interviews were conducted with the participants. Information given during the interviews was held in confidence and no names of individuals were documented in this report.

CHAPTER 2: RESEARCH FINDINGS

2.1. Introduction

This chapter documents the results of the research study through tabular and graphic presentation of data, summary discussion and analysis of the findings. Pursuant to the objectives of the study, the findings are presented under relevant sub headings.

2.2. Response rate

During the study 47 interviews were conducted with nurses from Makoni and Mutare districts, in Manicaland province. A total of 50 interviews with nurses were expected to be conducted, however 47 were done giving a response rate of 94%. Three nurses were not interviewed because of the following reasons; one nurse was not available on the interview date and two nurses were not reached due to flooding in Makoni district. The interviews were conducted by enumerators who received a three-day training on research ethics, conducted by Africa University Faculty of Health Sciences. The participants were interviewed at their working stations, with each interview ranging from 50 – 65 minutes long. Secondary data was also collected during the time of the interviews.

The following table shows cadres interviewed by qualification.

Table 1: Qualifications of participants

Qualification of cadre	Total interviewed
Primary Care Nurses (PCN)	31
Registered General Nurses (RGN)	9
State Certified Nurses (SCN)	4
RGNs with Midwifery	3
Total	47

During our interview process we learnt the following lessons;

- The questionnaire were easy to administer as they were fine tuned after piloting them in Mutasa district
- The nurses were willing to respond to the questions asked although they had other pressing commitments
- The planning process paid dividend as the logistical arrangements went smoothly.

2.3. Training

We sought to find the training coverage in HIV/AIDS related program. Table 2 below shows the nurse response to whether they were trained or not in the different HIV fields.

Table 2: Training coverage in HIV related programs

Field of training N=48 (%)	Responded Yes	Responded No
IMAI/IMPAC does this need expanded	32 (75%)	16 (25%)
Pediatric OI/ART Management	23 (47.9%)	25 (52.1%)
Adult OI/ART Management	27 (56.2%)	21 (43.7%)
Early Infant Diagnosis (EID)	26 (54.2%)	22 (45.8%)

2.4. Current Practices

2.4.1. PMTCT practices

Of the 47 clinics interviewed, 13 (27.66%) are accredited ART sites with the nurses currently starting eligible HIV positive pregnant mothers on ART in the ANC setting. The other 34 clinics were not ART accredited sites so they referred all patients in need of ART to secondary health care facilities or other ART accredited sites. All the health facilities reported implementing Option A PMTCT guidelines as recommended by the MOHCW under the WHO 2010 guidelines. Thirty four clinics started implementing Option A as early as 2010 when the new guidelines were released, the remaining 13 started implementing Option A in 2012. No health facility reported using single dose nevirapine (sd-NVP) as the PMTCT regimen of choice except in emergency cases when the HIV positive pregnant mother presents in labour for the first time.

2.4.2. OI/ART practices

All clinics, except one, reported offering the following OI services as a minimum package of care they offer to their communities;

- Provider Initiated HIV Testing and Counselling (PITC)
- Pre-HAART registration and follow-up
- Cotrimoxazole initiation and follow-up
- Management of minor OIs.

All the 46 sites above reported following up HIV positive pregnant mothers in their ANC clinics, with 37 (79%) sites currently following up HIV positive pregnant mothers on ART. The patients would have been started on ART by the facility itself, or have been referred to them for follow-up by an ART initiating site. What is pleasing the findings is that 35 (76.1%) of the 46 sites had no ART eligible (CD4 < 350, WHO HIV stage 3 & 4) HIV positive pregnant women waiting to be initiated on ART. This means all the patients the facility identified to be started on ART were already taking ARVs as recommended reducing the chances of transmitting HIV vertically. Eleven sites (33.9%) had patients on ART waiting list,

with one site reporting having as many as 5 pregnant mothers waiting to be started on ART. The reasons given for having patients on ART waiting list were that;

- I. The patients has been referred to an ART initiating site but did not go because they did not have the bus fare to travel or they were too busy in the fields to go to the referral centre
- II. The patients went to the initiating site but they were not attended to or they were still waiting to be started on ART at the referral centre
- III. Patients were still receiving pre-ART counselling sessions
- IV. The patients refused to be put on ART due to religious reasons and some felt not yet ready for the lifetime commitment of taking ART
- V. The patients were lost to follow-up before initiation on ART.

13/47 (27.7%) clinics studied reported being static ART accredited sites; meaning the clinic had and controlled its own ARV stocks on site and the nurses initiated HIV positive on ART.

2.5. Mentorship

The MOHCW introduced the mentorship program in 2009 as a way of practical training that fosters ongoing professional development to improve quality of care and outcomes in the OI/ART program. During mentoring a mentor visits or communicates with his/her mentee by phone/email giving advice on how to manage their patients, in this context their HIV positive patients. This program has been seen to improve nurses' confidence in managing their patients. During our study we found that only 12 (26.1%) of the 47 sites in the study reported being mentored in OI/ART management. The frequency of the visits ranged from every month to every quarter. Nine sites reported being visited every month. Most mentoring was been done by other senior experienced nursing officers (e.g. district nursing officer and community nurses). Two sites reported being mentored by doctors.

2.6. Data management

Effective management of data is a key component of any program success. We sought to find how data management was being done in the two districts' OI/ART program and the challenges being faced in the process. We found that 45 (95.7%) of the 47 sites were using the standardised MOHCW OI/ART registers to collect and compile they data. One clinic saw no need to keep the registers because they were not offering any OI services. Whilst the other clinic was improvising using hard covered counter books because they did not have the standard registers.

All the sites reported that the nurses were responsible for filling in the standard PMTCT registers and compiling the monthly report forms for onward transmission to the Provincial Medical Director's office. There were few exceptions where these responsibilities would be passed to the nurse aides and Primary Care Counsellors (PCC) when there was pressure of

work or the nurses were away on other duties. The nurses reported having their own data quality control checks, but they relayed also on the district health executive (DHT) team for external verification.

The following were reported as the major challenges being faced in data management;

- There are too many registers to be filled in; hence data might be collected sent without verification. There is too much information to be filled in each register, this is often tiresome and usually the registers are incomplete
- Compiling the data at the end of each month is time consuming compromising the quality of data and other nursing duties
- There is often shortage of time to do data management due to overwhelming nursing duties
- There is no transport for onward transmission of data. At times the nurses use their own money for bus fare to transmit the required weekly and monthly reports
- Using public transport to transmit data at times results in the reports being lost or being submitted late. This also affects the confidentiality code expected in managing health information
- There are no files and filing cabinets for data storage. There is limited space to store patients' files. There are no rooms to collect data from a patients this compromise privacy
- A lot of time is spent retrieving and filing patients' files on review dates. Shortage of staff especially collection and compilation of data because there is often one nurse on duty; this often results in nurses' burn out
- Having different people filling registers within a given period results in data contamination due to errors.

The respondents gave the following recommendations to address the challenges they meet in data management;

- The MOHCW should increase the staff establishment from 2 to 3 nurses to ease the pressure of work allowing more time to be committed to data management. Some felt instead the MOHCW should employ a Health Information Officers at each clinic to carry out data management
- There is need for electronic databases to improve efficiency in data collection, compilation, analysis and reporting.
- Provide transport for collecting paper based data at clinics on a regular basis
- There is a need to provide on job training and **mentorship** on data management. **Regular support and supervision** visits from the DHE team would also help improve data management

- There is a need to develop a provide PNC **register because** at the moment nurses are improvising using hard covered counter books. The ANC register must be integrated to include HIV testing and counselling avoiding too many registers.
- **Financial assistance** needs to be provided to submit reports in cases where nurses use their own money to transmit data.

2.7. Current nurses' specific duties, roles and responsibilities

An assessment was done to gauge the knowledge of nurses of their current duties, roles and responsibilities in the OI/ART program. We also sought to assess their knowledge of the duties of their working colleagues. We found that nurses were quite knowledgeable about the duties, roles and responsibilities they have in the OI/ART program. We did this by comparing their responses to what they perceive to be their duties versus the duties prescribed by the MOHCW. The following are the responses the nurses gave, as to what their duties are in the OI/ART program:

- HIV testing and counselling (pre- and post-)
- Patient registration in the OI/ART register
- Conduct WHO clinical staging
- Medical and physical assessment of the patient
- Conduct follow ups
- Educate and counsel patients on nutrition
- Ordering and collecting CD4 counts test
- Ordering and collecting blood for urea and electrolytes (U & Es), full blood count (FBC), and creatinine CD4 tests.
- Assess whether clients are eligible for ART
- Preparing eligible patients for ART
- Treatment of OIs and minor illnesses
- Refer complicated cases for further management
- Counselling on ART adherence
- Pre-ART counselling sessions
- Continuous counselling if the patient is on ART
- Prescribing, and dispensing of cotrimoxazole and other drugs
- Re-supplying of ART
- Management of drug side effects
- Refer patients to doctor/ refer eligible clients to doctor

The findings above are consistent with the current prescribed duties for nurses. However the nurses were unsure about their role in initiating eligible patients on ART. Twenty (41.7%) of the 48 nurses interviewed gave a response that nurses can start eligible patients on ART, whilst the other 28 (58.3%) did not give that response or were quiet on the subject of initiation by nurses. The uncertainty emanates from the fact that, although the MOHCW has come up with a well publicised stance that nurses should initiate patients on ART there has not been a letter written to this effect. Our literature search revealed a few policy documents on the subject, however no letter was written to the PMDs, PNOs or DMOs as is usually done to officially support the stance.

Some of the nurses interviewed are already initiating patients on ART. Twelve nurses (26.1%) stated that they have been starting patients on ART. Amongst the 12 nurses starting patients on ART, 6 (50%) of them were sent for attachment to a certified OI/ART to gain practical experience needed to manage patients on ART. Seven (58.3%) of the 12 nurses were also currently being mentored by their senior colleagues.

The nurses also gave the following responses as to what they perceive to be the roles of doctors in OI/ART management:

- Assess patients for WHO clinical staging
- Assess patients for ART eligibility
- Screen patients for other ailments that require treatment before ART
- Interpret patient CD4 count and other blood investigation results
- Ordering other investigations as indicated
- Initiates patients on ART
- Treats ART sides effects
- Monitors for drug side effects
- Management of complicated sides effects
- Changing ART regimens (substituting and switching)
- Carry out follow up on patients referred
- Treatment of referred patients
- Mentorships, support and supervision of staff

The results reveal a good knowledge on the roles and responsibilities of doctors in ART management, although there is overlap of some duties with nurses' duties. Most of the nurses (77.08%) stated that the doctors are responsible for starting eligible patients on ART.

The respondents were also asked to fill out the table 3 below, stating what duties they are already performing in the PMTCT and OI/ART program. For whatever duty they were not performing they had a choice to choose whether they should be allowed to do the duty or they should not be allowed to do the duty. The table is divided into 3 section, the first the scope of work expected of nurses in the PMTCT program. The second shows standard scope of nursing care including HIV related practices, these are duties they are expected to be currently performing. The last section consists of the proposed scope of nursing care, NLI-ART; the respondents were expected to indicate whether they should be allowed to perform the proposed duties. If the nurse responded by stating, 'not doing it and should not be allowed to do it' they were kindly asked to explain their reasoning.

The findings in table 3 below are quite encouraging for the PMTCT as the program drives towards elimination of new pediatric HIV infections. NLI –ART is viewed as a key cog to drive decentralisation of ART; increasing the coverage and retention in PMTCT. Seventeen (37%) nurses interviewed were already starting eligible HIV positive pregnant mothers on ART, whilst the other 28 (60.9%) were prepared to start initiating ART but were still waiting for written permission to do so. 32 (68.1%) and 34 (72.34%) stated that they were prepared to start eligible HIV positive adults and pediatric patients on first line ART respectively. However a minority of 8.5% and 10.64% stated that they were not initiating ART in adults and pediatric patients respectively and they should not be allowed to do so.

Table 3: Scope of work in HIV care

Nurses' Scope of work in HIV Care	Yes doing it already	Not doing it but should be allowed to	Not doing it and should not be allowed
PMTCT n=46 (%)			
Prescribing & dispensing MER 14	46 (100%)	0	0
Manage complications & drug side effects	35 (76.1%)	8 (17.4%)	3 (6.5%)
Prescribing ART in pregnant mothers	17 (37%)	28 (60.9%)	1 (2.1%)
Prescribing & dispensing infant e-NVP	46 (100%)	0	0
Expanded standard nursing scope of care including HIV related practices n=46(%)			
HIV testing and counselling	45 (97.8%)	1 (2.2%)	0
Staging using WHO Criteria	46 (100%)	0	0
Ordering CD4 counts	45 (97.8%)	1 (2.2%)	0
Interpretation of CD4 Results	46 (100%)	0	0
Pre – ART preparation	46 (100%)	0	0
ART adherence counselling	46 (100%)	0	0
Chronic HIV management to support patient self care	45 (95.7%)	1 (2.1%)	1 (2.1%)
Clinical monitoring & follow-up of patients not eligible for ART	47 (100%)	0	0
Follow up patients already on first line ART	41 (87.2%)	5 (10.6%)	1 (2.1%)
Assess & manage basic acute and chronic conditions in adults	46 (97.9%)	1 (2.1%)	0
Proposed scope of nursing care including HIV care: NLI-ART n=47 (%)			
Assessment of adult patient for ART eligibility	46 (97.9%)	1 (2.1%)	
Assessment of adult patient for ART readiness	46 (97.9%)	1 (2.1%)	
Preparation of the adult patient for ART	47 (100%)		
Prescription of first ART for the adult patient who is ART naïve	11 (23.4%)	32 (68.1%)	4 (8.5%)
Monitoring of adult patient on ART	45 (95.7%)	2 (4.26%)	0

Management of uncomplicated OIs and ARV drug toxicity	43 (91.5%)	4 (8.51%)	0
Referral of complicated cases doctor	47 (100%)	0	0
Initiation of pediatric first line ART	8 (17.0%)	34 (72.3%)	5 (10.6%)
Maintenance of stable pediatric HIV patient on ART	39 (83%)	8 (17%)	0

2.8. Acceptability of Nurse Led Initiation of ART

The study was done with an aim to inform policy makers on whether nurses find initiation of pediatric and pregnant on ART acceptable. All along the responsibility was falling on the doctors' shoulders to initiate all patients on ART.

The results show that 89 % of the nurses interviewed during the study see it acceptable for nurses to start pregnant mothers on antiretroviral therapy, with 55.5% strongly accepting NLI. The two nurses (4%) who saw it strongly unacceptable cited not having knowledge on ART and a fear of managing ART side effects and their effects on patient mortality and morbidity. One of the two nurses stated that, *"there is shortage of staff already, so if there is addition of (NLI-ART) duties then there will be much more crisis"*. Meaning, the nurse did not view NLI as part of the solution to the existing human resource crisis. Rather NLI-ART might add to the problem.

Table 4: Acceptability of Nurse led Initiating of ART amongst nurses

Acceptability of Nurses Initiating	Frequency (%)	95% CI
Strongly acceptable	26 (55.32)	40.12 – 69.83
Acceptable	16 (34.04)	20.86 – 49.31
Not acceptable	2 (4.26)	0.52 – 14.54
Strongly not acceptable	2 (4.26)	0.52 – 14.54
Neutral	1 (2.13)	0.05 – 11.29
Total	47 (100)	100.00%

Nurses that responded in favour of NLI-ART felt that nurse led initiation of ART 'fulfils the mandate of nurses to save lives' by starting ART early and reducing the patient's pre-HAART waiting time. The nurses also cited that NLI-ART serves to reduce transport costs for patients and increase accessibility to ART services. As result there will be early ART initiation, which reduces opportunistic infections thereby improve the quality of life. The general feeling amongst nurses before the study has been that NLI-ART increases their workload; surprisingly some nurses said NLI-ART reduces their workload. If patients are started on ART early it reduces the frequency of patients presenting at the clinic with opportunistic infections to be treated. There was a general feeling that nurses are ready to

support the ART decentralisation process by initiating patients on ART. However the respondents in favour of NLI-ART stated the need to continue to have training and mentoring in order to improve the quality of care in NLI-ART.

When asked what needs to be done by the MOHCW and its partners to make NLI-ART more acceptable, the four recurring answers were as follows:

1. The MOHCW should carry out adequate OI/ART training as this motivates nurses because they feel suitable to initiate. The training should be accompanied by refresher course to update them on the current trends in HIV management. No further probing was done on what would constitute adequate training and how frequent the refresher courses should be. One respondent however suggested 2 yearly refresher courses.
2. Regular support and supervision, and mentoring visits should be conducted by the district health executive members to check and improve on the quality of service the nurses would be offering to their patients.
3. The MOHCW should give incentives to motivate the nursing staff. Staff establishment should be increased at the clinics to cope with the increasing workload.
4. Resources like fuel, transport, filing cabinets, medicines and medicines cupboards should be availed.

One of the questions set to explore the impact, whether negative or positive, of expanding nurses' practices in managing ART would be upon their ability to perform regular nursing duties. One of the recurring positive impact response was that NLI-ART would allow them to plan and schedule their programmes (e.g. days for ANC, initiating ART, and EPI outreach) better. At the moment ART initiation days are imposed on them by the visiting doctor or nurse. The other response was that, 'there will be low nurse burnout as well as other health care staff, because early initiation improves client's health. This in turn reduces their clinic visits and workload reduces subsequently'. The respondents cited that NLI-ART has an impact of reducing the nurses' workload by lowering the number of defaulter follow-ups and reducing the frequency of patients presenting with OIs hence they can concentrate on their other duties better. The other positive impact stated was that NLI-ART will increase their knowledge and competence which in turn will increase their confidence to manage other patients presenting with non-HIV related conditions.

However despite the positive impact stated above, some of the respondents felt that NLI-ART would have a negative impact on their ability to perform other nursing duties. Chief amongst this was that NLI-ART would increase their workload, compromising on the time nurses spend with each patient leading to patient mismanagement. Some of the responses were as follows;

'increased workload such that some duties of the nurses will not be done properly and some registers might not be filled accurately'; 'increased workload leading to burnout'; 'burnout on nurses'; 'increased manpower shortage also leading to patient mismanagement'; 'lack of adequate time with the patient because of his patient workload leading to

mismanagement of patient and other mistakes’; ‘inaccurate data as a result of too much paper work piled on one person’.

All the nurses interviewed agreed that a certain ‘criteria’ has to be in place, rather than allow every nurse to start patients on ART. All the nurses interviewed also agreed with the MOHCW criteria stated below:

- I. Nurse should have undergone the basic training course on adult and or paediatric OI/ART.
- II. The nurse should have been attached for a minimum of four weeks at a centre that is accredited to initiate ART as per the national guidelines.
- III. The nurse or clinical officer should hold a valid practising licence from the relevant regulatory body.
- IV. In addition to meeting the above criteria, the nurse or clinical officer should be recommended by the *DMO, DNO or OI/ART Programme Manager* of the site to initiate ART.

In addition to the above criteria the nurses stated, that for one to start patients on ART they have to be committed to NLI-ART, with one nurse citing HIV positive nurses on ART to be committed enough to carry the responsibility. They also have to be competent in ARV ordering and stock management. What came out consistently was the fact that the nurses have to be trained and have some experience in OI/ART management. There was however some variances in the period of OI/ART experience, with the period varying from 3months to 3 years. One of our respondents however stated that all nurses should initiate patients on ART regardless of experience and the necessary training.

2.9. Feasibility of Nurse Led Initiation of ART

A feasibility assessment of NLI-ART was carried out based on the nurses’ experience and judgement on the current scenario prevailing in their clinics and district. A question was asked, with five possible responses, on whether NLI-ART would be feasible given the resources they already have. The table below gives the frequency of the responses.

Table 5: Nurses perception on feasibility of NLI of ART

Feasibility of NLI-ART	Frequency (%)	95% CI
Strongly not feasible	0 (0)	0
Not feasible	0 (0)	0
Neutral	0 (0)	0
Feasible	28 (59.57)	44.27 – 73.63
Strongly Feasible	19 (40.43)	44.27 – 55.73
Total	47 (100)	

The study findings reveal that NLI-ART feasible in the prevailing conditions. All respondents stated that it is possible to do NLI-ART. A literature search done before the commencement of the study suggest that it will not be feasible to do NLI-ART, based on the criteria and conditions that need to be met before hand.

Upon further probing on what needs to be done by the MOHCW and its partners to make NLI-ART more feasible, the following responses were given:

1. Standard Operating procedures (SOP) should be set, coupled with support and supervision, ongoing training and mentoring.
2. The MOHCW should ensure adequate supplies of medical and non-medical consumables.
3. Appropriate and enough infrastructure for HIV counselling and testing, ART and laboratory services.
4. The 'higher offices' should give feedback on progress being done in the programme.
5. MOHCW should review staff establishment upwards to match workload and give incentives to those doing the job.

To make NLI-ART acceptable and feasible, the issue of training keeps recurring; this is despite the fact that all the nurses interviewed had received some f training either in Adult and Pediatric OI/ART management, Early Infant Diagnosis or IMAI/IMPAC. Our study found that 75% of the nurses interviewed were trained in the IMAI/IMPAC course; 54.2% in EID; 52.1% in Pediatric OI/ART management and 56.3% in Adult OI/ART management. Although the training coverage in IMAI/IMPAC (a course relevant for them to start ART in PMTCT) is fairly high as compared to other modules, the nurse keep requesting for more training in-order for them to more confident to start patients on ART. Which begs the question is the current curriculum enough or there is a need to design new curriculum or strategy to focus on nurses that are going to be starting patients on ART. Or is there a need to integrate such a curriculum into the current student nurse curriculum before graduation and deployment into the nursing field. One respondent suggested integration of OI/ART management in the current nurses training would be a better strategy build confidence for ART initiation.

2.10. Task shifting

Task shifting is a strategy that has been found to reduce nurses' workload and increase the feasibility of NLI-ART. We sought to find whether nurses are in favour of task shifting as a strategy to enhance NLI-ART.

Table 6: Nurses perceptions on Task Shifting

Is task shifting/sharing viable and sustainable?	Frequency	CI
Yes	36 (77%)	61.9 - 87.7%
No	11(23%)	12.3 - 38.3%
Total	47 (100%)	

The results above reflect that the majority of nurses interviewed were in favour of task shifting a sustainable way to reduce nurses' workload and encourage NLI-ART. The nurses in favour of task shifting cited that task shifting improves teamwork and continuity in the management of their patients. If a nurse is away then the lower level cadres will be able to effectively manage the patient to a certain extent. Also cited was that task shifting "improve efficiency of the nurse and the patients waiting time will be less". Those not in favour of task shifting stated that such an intervention would compromise on the quality of health care offered to patients, although some of them expressed an interest if adequate training is conducted to equip the cadres who are getting the task shifted to them.

The respondents recommended to the following task to be shifted to nurse aides, general hands, and primary care counsellors.

Table 7: Duties recommended for shifting to nurse aides, PCCs and VHWs

Nurse aides	Village Health Workers	Primary Care Counsellors
<ol style="list-style-type: none"> 1. Filling registers 2. Dispensing medicines to patients 3. Observations e.g temperature / checking vital signs 4. Simple wound dressings 5. Compile OI/ART registers 6. Weighing babies 7. Assist in deliveries 8. Damp dusting 9. Performing malaria Rapid Diagnostic Tests (RDT) 	<ol style="list-style-type: none"> 1. Follow up on clients who are in the community 2. Conduct ART adherence follow-up visits 3. Health education (nutrition and exercise) 4. Carry out vital observations, weight taking/ checking vital observations 5. Damp dusting 6. Weighing babies 	<ol style="list-style-type: none"> 1. Update patient files 2. Counselling- carry out pre ART counselling; pre and post HIV test counselling and ART adherence counselling 3. Health education

Other cadres mentioned for task shifting/sharing were general hands and environmental health technicians, although the tasks recommended for them was quite limited.

2.11. Nurses perceptions on Pediatric HIV Elimination

A simple question, 'Do you think elimination of paediatric HIV is a realistic goal?' was asked gauge the nurses' perceptions on the goal of eliminating new pediatric HIV infections. The expected response was a yes/no, follow-up by an explanation giving reason for either choice.

A majority saw the goal of elimination as something that is within reach. For most of the clinics this was based on the fact that there has been a dramatic in the number of new HIV cases they are diagnosing. Here are some of the responses given;

*'Nowadays with **MER 14** we have never had a positive DBS, so it is possible'*

'New babies being born by positive pregnant mother who have been on ART and MER are being born HIV negative, provided the mothers comply and adhere to drugs'

'Of all the mothers who went through the PMTCT programme in 2012 all the babies are HIV negative'

'If mothers book early before 14 weeks get early initiation on ART, this reduces vertical transmission and elimination is realistic'

Most of the responses were based on sound reasoning and evidence, which is really encouraging showing that the PMTCT program is moving in the right direction. What we got were passionate responses of nurse who have really embraced the program and encouraged by the results the program is bearing. However the resounding theme in the responses which were given was that the patients have a big role to play in their care to prevent HIV vertical transmission, as much as the health workers have to do their duty. The patients have to book early to be started on the appropriate regimen; adhere to the treatment and care given; and delivered at a health facility.

The two nurses who felt that the program is not well accepted by the community because of the poor enrolment of patients into the PMTCT program at their health facility and the poor male involvement in the program. Otherwise the majority (95.74%) felt the PMTCT program is accepted due to the following reasons;

- *There is a general improvement in early ANC booking in pregnant mothers as early as 14 weeks.*
- *The PMTCT success stories whereby HIV exposed infants remain HIV negative after weaning are making the community appreciate the program.*
- *The majority of pregnant mothers are coming voluntarily for ANC, following up the whole PMTCT process without missing their follow-up dates.*
- *Some of the mothers are at liberty to disclose their HIV status to significant others.*
- *Parents are encouraging their sons, daughters and in-laws to go for HIV testing.*
- *PMTCT is something now being discussed at community gatherings even at boreholes and gardens.*
- *Through village health workers (VHWs) there is a great education on early HIV tests. HIV is now called "**asina irombe**" and it encourages people to come for testing.*
- *Male partners are now accompanying their wives for early ANC booking; and fathers are coming with their children for the treatment in the absence of the child's mother.*

The other reason for such optimism on pediatric HIV elimination; is that the nurses feel the PMTCT program is well accepted by their communities.

CHAPTER 3:

3. MAIN FINDINGS, CONCLUSION AND RECOMMENDATIONS

This chapter presents the main study findings thereby providing answers to our study questions.

3.1. Main study findings

3.1.1. Objective 1: The study aimed to assess whether it is acceptable amongst nurses to start ART in pregnant and paediatric patients and determine the feasibility of nurse led initiation of ART.

- 89% of nurses stated that it is acceptable for them to start ART in HIV positive pregnant mothers and children.

The participants felt that not every nurse should be allowed to initiate patients on ART. They stated that the nurses have to be rightfully trained in OI/ART management and they should be having at least 6 months experience in OI/ART management. The nurses should be supported by regular support and supervision visits from their superiors and incentives wherever possible should be given for those carrying on with the task. However those against NLI of ART felt that the strategy would increase their workload thereby compromising the quality of care they offer to patients.

- All 47 (100%) nurses thought it was feasible for NLI of ART to be implemented.

Our participants stated that the MOHCW should develop the necessary NLI SOPs, coupled with support and supervision, ongoing training and mentoring. The MOHCW should ensure adequate supplies of medical and non-medical consumables. Appropriate and enough infrastructure for HIV counselling and testing, ART and laboratory services should be put in place. The number of nurses per clinic should be reviewed upwards to match workload and give incentives to those doing the job.

3.1.2. Objective 2: To assess national health policies, guidelines on ART management, legal framework and scope of permitted nursing practice.

The scope of nurses' practice in Zimbabwe is determined and monitored by the Nurses Council of Zimbabwe. The scope of practice includes:

- Implementing nursing care to achieve identified outcomes
- Documenting the implementation of interventions
- Assessing, diagnosing, prescription and provision of relevant therapeutic interventions in line with the scope of practice of the nurse
- Prescribing and dispensing appropriate medication (EDLIZ Group C Drugs) within the scope of practice for the purpose of administering therapeutic remedies to the patient

In December 2012 the Minister of Health and Child Welfare was quoted in the local press saying that the ministry has mandated the nurses in Zimbabwe to initiate patients on ART. The minister went on to say that the ministry has already started training nurses to be able to start and manage patients on ART. Our literature search however reveals that there has not been official communication from the minister to the nurses or district and provincial

managers to that effect. At the time of writing of this paper some of the nurses interviewed were still waiting for this official communication in order for them to start ART initiation. The nurses view the letter also as a cover letter for them in case anything adverse event happens to patient they start ART. The NCZ which has a mandate to define nursing duties had not yet approved the move with council against such a strategy.

In January 2013 ARV drugs were classified Group 'C' drugs from 'A' allowing all primary health clinics in Zimbabwe to be able stock the drugs. The declassification also allow for nurses to be able to prescribe and dispense the medicines at their clinics. This move was made in order to make NLI of ART feasible.

3.1.3. Objective 3: To establish the attitudes and perceptions of nurses in Makoni and Mutare districts towards nurse led ART initiation.

Nurses generally had positive attitudes towards NLI of ART; however the strategy should be accompanied by shifting some of the nursing duties to the lower level cadres like nurse aides, counsellors and general hands.

3.1.4. Objective 4: To determine the current challenges being faced in Makoni and Mutare district clinics in the PMTCT program.

We sought to find the challenges being faced by the health facilities in delivering PMTCT services. The following were noted as the most important challenges as depicted by the frequency of them being reported by the nurses;

- I. **Referring mothers and their babies for ART initiation** by doctors at the secondary health care facilities. The referred patients do not go because of lack of transport; hence they end up delaying or failing to access the appropriate care and treatment to prevent vertical HIV transmission. At times the doctors visit the clinics to initiate patients on ART, but the dates are not certain due to competing work and transport challenges. Hence the dates end up being changed further frustrating the patients.
- II. **The long HIV PCR test result turnaround time;** taking an average 1-4 months. This has led to lack of confidence in the programme by patients. Some babies end up being lost to follow-up whilst waiting for their HIV test results. At times conflicts between patients and health care staff are ensue due to this delay.
- III. **Poor male involvement** as evidenced by the poor turnout in ANC attendance. Male partners don't support women in coming for ANC therefore there is poor use condom use during pregnancy and breastfeeding increasing the risk of HIV re-infection and vertical transmission. Poor male involvement has also caused an increase in the ANC defaulter rate. If a woman is tested for HIV alone without the knowledge or consent from the husband, this results in physical and verbal abuse at home this in turn leads to some mother being lost to follow-up. Some women even fail to come for ANC booking because the husband does not consent.
- IV. **Drug stock-outs** were also mentioned as a major obstacle and when they are delivered they do match their current consumption. Its either the clinic will receive less or more than what they have requested. At times they receive drugs with a short shelf life, making stock control difficult.

- V. **Shortage of staff** in health centres was also a major challenge noted, with nurses failing to cope with the amount of work to be done.
- VI. **Clinic objectors**, like the Johanne Marange religious group and other apostolic sects, refuse to use modern health facilities resulting in mother delivering their babies at increasing the risk of vertical HIV transmission, maternal and peri-natal mortality.

3.1.5. Objective 5: To come up with appropriate recommendations on how best to implement NLI of ART

Study participants suggested the following recommendation as possible solutions to the challenges being encountered in delivering care within the PMTCT program.

- I. **Nurses should be allowed** to initiate ART on pregnant mothers and infants; in-order to reduce the patient waiting times and increase ART access and coverage. MoHCW should give incentives to mothers who follow the required PMTCT visits at the expected time
- II. **Decentralising of ART** to all clinics. Clinics should be allowed to keep and maintain their own stocks of ARVs.
- III. **ART distribution system should also be decentralised** to improve efficiency in distribution, reducing stock-outs, and distribution schedules should be developed and adhered to.
- IV. The MoHCW should **decentralize the Early Infant Diagnosis (EID) DNA-PCR system to provincial hospitals** to reduce the result waiting time.
- V. **Training more nurses** on ART management, and refresher courses on ART must be conducted so that nurses will be updated with current ART trends.
- VI. **Increase in staff establishment** in rural clinics so that a nurse will be allocated or delegated to run PMTCT and ART clinics.
- VII. **There is a need to combine registers** to have one and reduce the number of registers to be filled on a daily basis.
- VIII. **Infrastructure development** to have more space to administer all the duties in a suitable environment. The clinics recommended that more rooms be built in order to avail a place where counselling and dispensing of ART drugs can be done without compromising confidentiality for some patients.
- IX. **A 'strong' policy must be put in place by MoHCW to increase male involvement in PMTCT.** The policy must make it mandatory for male partners to accompany their wives for ANC. Education sessions must also be done so that men accept the program. Men should encourage their wives to adhere to treatment not adversely affect their wives' adherence to appropriate treatment and care.
- X. MOHCW to **supply IEC material** for distribution so that information may reach everyone in the community. Peer groups should also be given IEC material to distribute and use during their group education sessions.

3.2. Conclusion

NLI of ART is crucial to achieving increased ART coverage amongst pregnant and paediatric HIV-positive patients. The study found that it was acceptable that nurses should initiate ART in paediatric and pregnant patients. But for NLI of ART to be feasible, the MOHCW must engage with the NCZ which can authorise nurses to initiate patients on ART. It may then

develop and disseminate the new policy which will guide implementation. These policy initiatives are essential if Zimbabwe is to achieve its elimination of new paediatric HIV infections target by 2015. Finding that 26% of the nurses are already starting patients was encouraging as it reflects that NLI-ART is feasible and acceptable amongst many nurses. However having 77% of nurses reporting that initiation of patients on ART is the doctor's responsibility shows that more work on sensitisation has to be done. The MOHCW has been contemplating NLI of ART for years, yet it has not supported the strategy by developing the policies and procedures necessary to support this initiative.

The MOHCW introduced standardised registers to ensure that there is consistency in data collection and reporting by the different health institutions. This is also expected to make it easy for the nurses to collect the necessary data on the different indicators to be reported on. Having 95% of the sites reporting using the standardised registers is a positive. However the nurses consistently complained of having too many registers to fill in. They expressed that this adversely affected the time they spend with their patients, especially during the reporting week. The ministry needs to do more to make data management simpler for nurses, electronic data management needs to be considered urgently.

As reflected by our study results, the training coverage in the HIV related courses has been average. The highest coverage was recorded in the adult OI/ART management with only 56.3% of the nurses being trained. The results above do not augur well with the objective of achieving nurse initiation which expects at least 85% nurse training coverage. Classroom training of nurses in OI/ART is supposed to be complemented by mentoring. The objective of mentoring is to foster professional development and improve quality of care offered. This is done through practical training by experienced and trained mentors. Our study showed that there is poor mentoring coverage which might have an adverse effect on the nurses' confidence to take up NLI-ART. Lack of mentoring of nurses might also compromise on the quality of care offered to patients. The fact that only two sites reported being mentored by doctors has significance on the quality of mentoring currently being offered by 12 sites which reported being mentored. The MOHCW need to channel more resources to the mentoring program to ensure the NLI becomes feasible without compromising on the quality of care offered to patients.

Other two findings critical to the implementation of the PMTCT were that;

- 96% of our participant perceived that the PMTCT program is well accepted by the communities they work in. This is encouraging for a program that hopes to achieve an ambitious target which depends on community acceptability for its success.
- 98% of the nurses felt that elimination of new pediatric HIV infections is a reality by 2015. If implementers believe that a program can achieve its goal, it does have a positive on how implementation will be done. In this case the nurses thought they are able to achieve the goal of elimination since they are starting to report positive stories of children being born and weaned HIV free.

The MOHCW needs to do more to tap in the positive attitude shown by nurses towards NLI-ART for the nation to achieve universal coverage of ART in both pediatric and adult populations.