Prevention of Mother to Child Transmission Services Change Packages

Synthesis of the most robust and effective QI interventions to improve Prevention of Mother to Child Transmission Services in Global Fund supported hospitals in Nigeria

Quality Improvement Change Packages Series

The purpose of the quality improvement change packages is to provide a synthesis of the most robust and effective QI interventions for effective HIV programming. The quality improvement change packages series thematic areas include: prevention of mother to child transmission, laboratory, monitoring and evaluation, adolescent friendly health services, voluntary medical male circumcision, nutrition, HIV care and treatment, supply chain, Tuberculosis, and quality improvement.

FAROF acknowledges the work of the project staff, technical officers at MoH, and counterparts at supported facilities who have been instrumental to the project's many successes through implementation of the quality improvement interventions.

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List of Acronyms

ANC	Antenatal Care
ART	Antiretroviral Therapy
CME	Continuing Medical Education
EID	Early Infant Diagnosis
eMTCT	Elimination of Mother to Child Transmission
FSG	Family Support Groups
MCH	Maternal and Child Health
VMMC	Voluntary Medical Male Circumcision
MoH	Ministry of Health
PCR	Polymerase Chain Reaction
PMTCT	Prevention of Mother to Child Transmission of HIV
NEPWHAN	Network of People Living with HIV and AIDS in Nigeria
QI	Quality Improvement

1. Introduction

Over the years, the Freehearts Africa Reach Out Foundation has been working with Kaduna State Ministry of Health (MoH) to improve HIV and AIDS service delivery at select health facilities by leveraging on the Global fund support received by NEPWHAN to implement the Treatment Adherence and Support project. The project has aimed to:

- Support the MoH to scale up Prevention of Motherto-Child Transmission of HIV (PMTCT) and Voluntary Medical Male Circumcision (VMMC) as HIV infection prevention interventions within selected Global fund supported comprehensive facilities.
- Ensure provision of HIV care and treatment, laboratory and tuberculosis (TB)/HIV services within selected general hospitals.
- Enhance the quality of PMTCT, VMMC, HIV care and treatment, laboratory, nutrition, supply chain management, and TB/HIV services within selected hospitals, and
- Increase stewardship by the MoH to provide sustainable quality HIV prevention, care and treatment, laboratory and TB/HIV services at project-supported healthcare facilities.

The treatment Adherence and Support project provided technical assistance to 7 MoH hospitals to implement interventions aimed at elimination of mother-to-child transmission (eMTCT) of HIV. The roll-out of the project's eMTCT support to 7 hospitals involved the following interventions:

- Training of trainers on Option B+ using an adapted national curriculum
- Facility-based trainings on Option B+ for health care providers
- Formation/reconstitution of quality improvement (QI) teams at facility level with focus on PMTCT indicators
- Development and use of a mentorship coaching tool and its accompanying guide.

Table 1: Health facilities participating in the Global Fund PMTCT Quality Improvement Project

Name of Facility	Level of Facility
Ikara general hospital	General Hospital Comprehensive sites
St. Lukes hospital	General Hospital Comprehensive sites
General hospital Rigasa	General Hospital Comprehensive sites
Salamat hospital	General Hospital Comprehensive sites
SEFA hospital	Comprehensive sites
Giwa hospital	Comprehensive sites
General hospital Zokwa	General Hospital, Comprehensive sites

- Support to these QI teams through monthly mentorship activities with monthly post-mentorship review meetings and use of data to guide follow-up mentorships
- Harvest meeting with participating health facilities to compile tested changes and guidance for improving PMTCT aspects, and

- Collaborative learning among the different hospital QI teams to share best practices.

The project's approach to quality improvement (QI) was guided by the Model for Improvement that uses the Plan-Do-Study-Act cycles. Experts in HIV prevention, care, and treatment from FAROF supported the formation of multi-disciplinary improvement teams at all supported health facilities, through which QI interventions were implemented. This improvement collaborative approach, where teams work to identify and address a myriad of challenges affecting the content and processes of care, is consistent with the Ministry of Health's Quality Improvement Framework and Strategic Plan. On a monthly basis, the improvement teams received coaching and onsite supervision and mentorship on how to identify gaps in care, how to prioritize areas for improvement, and how to develop, test, and eventually implement change ideas that could lead to improvements. Quality improvement teams were supported to:

(a) Improve uptake of (antiretroviral therapy) ART among HIV positive mothers identified in maternal and child health (MCH) units;

(b) Improve uptake of ART among HIV positive infants identified at early infant diagnosis (EID) care points; and

(c) Increase male-partner engagement in PMTCT services.

2. Harvest Meeting

Following the finalization of approximately three years implementation of the PMTCT quality improvement projects, a 3-day learning session and harvest meeting was held in Kaduna in August 2018. The meeting was designed as a platform to review performance of the different PMTCT quality improvement projects, and to share experiences on best practices and bottlenecks affecting the provision of PMTCT services at the hospital level. The meeting brought together participants from the Global fund supported hospitals and Ministry of Health officials. Representatives from the 7 facility teams and the Global technical officials met to reflect on the process, discuss changes tested and related evidence of positive or negative results. The group developed their "best advice" based on their experience that could guide other hospital teams to improve uptake of: ART among HIV positive mothers identified in MCH units, 18 month retention of the HIV positive mother baby pairs in care, uptake of ART among the HIV positive infants identified at EID care points, and male partner engagement in PMTCT services.

Divided into small groups, teams discussed the change ideas they had tested, the steps they followed in introducing and testing these changes, and the results they had observed that could be attributed to the tested changes. During plenary sessions, the changes were discussed further by a larger and wider group of representatives, who also evaluated and scored them on the basis of the relative importance, level of simplicity and how scalable they were. All the parameters (relative importance, simplicity and scalability) were scored 1-5 by the participants. A score of 1 (one) for any of the parameters meant the change was not important, it was too complex and was not scalable. A score of 5 (five) meant the change was very important, or simple and/or scalable. The average scores are presented in **Tables 1- 3.** **Table 4 – 6** provide a comprehensive list and description of all the

change ideas tested, with notes on the specific steps taken to implement the change, the observed results and the number of facilities (scale) that implemented the specific change.

Table 1: Changes introduced to increase the number of mothers newly initiated on ART

SN	Change idea	Number of hospitals testing change	Rating Criteria			Total score	Average score
			Relative importance	Simplicity	scalability		
1	Re-organizing the antenatal (ANC) clinic to reduce waiting time	7	5	4	4	13	4.3
2	Enrolment onto ART in ANC	7	5	5	5	15	5.0
3	Strengthening counselling for positive mothers	7	5	4	4	13	4.3
4	Re-enforcing follow-up	7	5	3	4	12	4.0
5	Strengthening documentation of contacts	7	5	4	4	13	4.3

Table 2: Changes introduced to improve ART initiation for infants

SN	Change idea	Number of hospitals testing change	Rating Criteria			Total score	Average score
			Relative importance	Simplicity	scalability		
1	Improving documentation in ART register and patient charts	7	5	4	5	14	4.7
2	Conducting continuing medical education sessions (CME) on relevant topics related to ART initiation for infants	6	5	4	4	13	4.3
3	Strengthening counselling by engaging expert clients	6	5	4	4	13	4.3

4	Follow-up of polymerase chain reaction (PCR) tests and determining results	7	5	5	5	15	5.0
5	Physically escorting babies and their mothers to the ART clinic for enrollment	6	5	4	5	14	4.7

Table 3: Changes introduced to improve male involvement in PMTCT

SN	**Change idea**	**Number of hospitals testing change**	**Rating Criteria**			**Total score**	**Average score**
			Relative importance	Simplicity	scalability		
1	Sensitization of communities through various avenues, such as radios	4	5	3	4	12	4.0
2	Provision of male friendly services in the ANC clinic	5	5	4	4	13	4.3
3	Prioritizing couples	7	5	5	5	15	5.0
4	Issuance of invitation letters to male partners, asking them to attend ANC services with their wives	6	3	2	3	8	2.7
5	Verbal appreciation of male partners who come with their wives for ANC visits	7	5	5	5	15	5.0

3. Change Package for PMTCT

Intended Use

This change package is intended to provide ideas to other quality improvement teams that would like to improve the above PMTCT indicators. Teams may not necessarily replicate these change ideas; rather, they should adapt them to suit their facilities.

The next section of this change package provides a detailed description of what changes led to improvement, and how such improvement was derived. It is structured into three sub-sections, corresponding with the three improvement aims that the project set out to achieve in relation to improving PMTCT services in Nigeria. Each sub-section outlines the QI change concept applied, the problem being addressed, the change ideas tested, steps followed in introducing each change idea and the evidence that it led to improvement. Tables 4–6 provide a comprehensive list and description of all the change ideas tested, with notes on the specific steps taken to implement the change, the observed results and the number of facilities (scale) that implemented the specific changes.

At the start of the project, less than 40% of the eligible mothers were initiated on therapy. With introduction of innovative quality improvement change ideas, this proportion averaged 70% between 2017 and 2018.

3.1. Improvement Aim 1: Increasing the number of mothers newly initiated on ART

Table 4: Specific changes implemented to increase the number of mothers newly initiated on ART

Change concept	Specific problem being addressed	Change ideas tested	Steps in introducing the change ideas	Evidence that the changes led to improvement	Scale of implementation
Re-organizing the ANC clinic	Patients waiting time was long due to redundancy in patient flow patterns	Creating a client flow chart	• Problem identified during QI meeting • Staff trained and mentored in creating a patient flow chart by FAROF and MoH. • Designated staff to be responsible for every step in the	In Giwa and St.Lukes patient waiting time decreased from 3-5 hours to 30 minutes to 1 hour	All 7 hospitals implemented this change

			client flow chart • Monitored flow of clients over time		
Enrolment onto ART in ANC	Clients were not being enrolled on ART at the ART clinic because they were not reaching the ART clinic	• Introducing ART cards in ANC • Designating person to transfer ANC client's information into Pre-ART and ART registers • Introducing ARVs in ANC clinic	•Problem identified during the hospitals' performance review meetings •ANC and ART clinics collaborated and the ANC clinic was given stock of ART cards •CME and mentoring was offered to ANC staff on proper filling of the ART cards and pre-ART and ART registers by ART team and FAROF •FAROF supplied patient ART files and filing cabinet to ANC clinic • Staff in ANC was designated to enroll all new clients onto ART on the day they report for care, have them receive ARVs •ANC given stock of ARVs to be dispensed at the clinic •Internal supportive supervision was continuously offered by ART team •Continuously, FAROF and MoH provided ongoing onsite mentorship and coaching	ART enrollment increased in all hospitals	All 7 hospitals tested this change

			sessions •Enrollment onto ART was monitored		
Strengthening counselling for positive mothers	Newly diagnosed HIV positive patients not taking-up ART	Training staff and volunteers in HIV counseling	• Identification of problem during staff performance review meetings • Staff to be trained identified through training needs assessment, with training conducted by FAROF and MOH • CME sessions held for staff who didn't attend the training and volunteers. • Monitored patient uptake of ART	Uptake of ART for new HIV patients increased to 85% from 41% in Ikara General Hospital	All 7 hospitals tested this change
Re-enforcing follow-up	HIV positive mothers were not keeping appointments and were getting lost to follow up	Telephone reminders	• Problem identified during the performance review training • Appointment book introduced with correct telephone contacts of clients or their treatment supporters • Person designated to track clients who do not keep appointments and make reminder telephone calls • Responsible person provided with airtime courtesy of FAROF. • Telephone reminders were made to those who didn't keep	Appointment keeping increased in all hospitals	All 7hospitals implemented this change

			appointments and those who returned within 7 days • Change monitored through QI meetings		
		Home visits	•Problem identified during the hospital performance review training •QI team agreed to use linkage facilitators and family support groups (FSGs) to follow up clients that didn't return for appointments •Linkage facilitators and FSGs were oriented on follow-up by the QI team and provided with recording tools. •Staff developed a list of clients who didn't keep their appointments and communicated to the linkage facilitators and FSGs •Linkage facilitators and FSGs followed up these clients who didn't keep their appointments by visiting their homes •Clients who returned after home visits were recorded in the facility appointment book •Lost to follow up of clients were monitored	Appointment keeping increased in all hospitals	All 7 hospitals implemented this change

Strengthen documentation	Poor documentation was leading to erroneously poor performance	Training and mentorship of staff in accurate, complete and timely documentation	• Problem was identified during onsite coaching and mentorship sessions • Staff to be trained were identified • Training in documentation was carried out by FAROF and MoH • Internal ongoing CME and mentoring on documentation was carried out by the data team at the facility. • Data team carried out continuous internal supportive supervision. • Data quality assurance monitoring was instituted at the facility.	Observed improvements in quality documentation	All 7 hospitals implemented this change

3.2. Improvement Aim 2: To improve uptake of ART among HIV positive infants identified at EID care points

Uptake of ART among infants improved from 44% at baseline to 66% by September 2017, with peaks of 77% observed in early 2018. During the course of the FAROF support, QI teams at the various hospitals introduced change ideas that included competency building for health workers and empowerment of mothers (details of which are in Table 5).

Table 5: Specific changes implemented to improve uptake of ART among the HIV positive infants.

Change concept	Specific problem being addressed	Change ideas tested	Steps in introducing the change ideas	Evidence that the changes led to improvement	Scale of implementation

Improving documentation in ART register and patient charts	Poor documentation was leading to erroneously poor performance	Training and mentorship of staff in accurate, complete and timely documentation	• Problem was identified during onsite coaching and mentorship sessions • Staff to be trained were identified • Training in documentation was carried out by FAROF and MoH • Internal ongoing CME and mentoring on documentation was carried out by the data team at the facility. • Data team carried out continuous internal support supervision. • Data quality assurance monitoring was instituted at the facility.	Observed improvements in quality documentation	All 7 hospitals implemented this change
Enrolment onto ART in ANC	Clients were not being enrolled on ART at the ART clinic because they were not reaching the ART clinic	• Introducing ART cards in ANC • Designating person to transfer ANC client's information into Pre-ART and ART registers • Introducing ARVs in ANC clinic	•Problem identified during the hospitals' performance review meetings •ANC and ART clinics collaborated and the ANC clinic was given stock of ART cards •CME and mentoring was offered to ANC staff on proper filling of the ART cards and pre-ART and ART registers by ART team and	ART enrollment increased in all hospitals	All 7 hospitals tested this change

			FAROF •FAROF supplied patient ART files and filing cabinet to ANC clinic • Staff in ANC was designated to enroll all new clients onto ART on the day they report for care, have them receive ARVs •ANC given stock of ARVs to be dispensed at the clinic •Internal supportive supervision was continuously offered by ART team •Continuously, FAROF and MoH provided ongoing onsite mentorship and coaching sessions •Enrollment onto ART was monitored		
Knowledge of staff related to ART initiation for infants	HIV positive infants were not being initiated on ART due to lack of knowledge by staff	Conducting trainings, mentorships and CME sessions on relevant topics related to ART initiation for infants	•Problem identified during the hospitals' performance review meetings •Needs training assessment carried out by the hospitals' administration •Staff to be trained identified •Trainings carried out by FAROF and	ART initiation for infants increased in all hospitals	All 7 hospitals tested this change

			MoH •Continuous coaching's and mentorships and CME on relevant topics undertaken by FAROF and ART staff •Internal support supervision initiated •Monitored performance of ART initiation for infants		
Strengthen counselling by engaging expert clients	Caregivers were not bringing HIV positive infants to be initiated on ART	Use of expert clients in HIV counseling for ART initiation for infants	• Identification of problem during staff performance review meetings • Idea of using expert clients suggested by the QI team • Expert clients oriented on ART initiation counseling by the nurse counselors. • Expert clients offered continuous coaching and mentoring • Internal supportive supervision offered to expert clients. • ART initiation for infants monitored	Uptake of ART for new HIV positive infants increased to 90% in Zonkwa General Hospital	All 7 hospitals tested this change
Follow-up of PCR tests and determining results	Staff in ART clinic was not receiving Deoxyribonucleic Acid PCR results	• Telephone call to Central Public Health Laboratory	• Designated a person to be responsible for following up of PCR results	PCR results received on time increased; 95 % in Salamat	All 7 hospitals implemented this change

	within 2 weeks	(CPHL) • Physically following up results from the laboratory	• Responsible person would develop a list of results expected each week from the PCR dispatch book and check if the infant EID chart and register were filled • The missing results were followed up in the laboratory and collected if available • If results not available, CPHL was called to inquire about the missing results using FAROF airtime	hospital	
Physically escorting babies and their mothers to the ART clinic for enrollment	Babies not being enrolled in the ART clinic	• Use of triplicate referral form • Physically escorting mothers and babies to ART clinic for enrollment	• Problem was identified during onsite coaching and mentorship sessions • QI team agreed to use volunteers to escort mother-baby pairs to ART clinic, with volunteers orientated in use of triplicate referral forms • Volunteers' escorted mother-baby pairs, handed in the referral form and recorded referral in the referral book.	Observed improvements in number of babies enrolled in ART clinic	All 7 hospitals implemented this change

			• Internal supportive supervision conducted, and performance monitored		

3.3. Improvement Aim 3: To increase male partner engagement in PMTCT activities

Male partner involvement in PMTCT activities has been challenging, historically, and we only managed modest improvements. From a baseline of 14% in 2016, we had improved to 26% by September 2017. QI teams at the supported hospitals introduced the change ideas detailed in Table 6, to register the results we did.

Table 6: Specific changes implemented to increase male partner engagement in PMTCT services

Change concept	Specific problem being addressed	Change ideas tested	Steps in introducing the change ideas	Evidence that the changes led to improvement	Scale of implementation
Sensitization of communities through various avenues, like radios	PMTCT mothers not attending ANC due to lack of male partner support	• Radio talk shows • Health education talks during outreaches	•Problem was identified during hospital performance review meetings •Administration contacted community leaders (both political and civil) for airtime on the community FM radios •Staff were assigned to appear on radio talk shows to discuss assigned topic •Staff held talk shows on advantages of male engagement in PMTCT services •One staff member was responsible for talking about	Observed improvements in males accompanying their partners	4 hospitals implemented this change

			importance of male involvement in PMTCT services during outreaches in the community		
Provision of male friendly services in the ANC clinic	Male partners were not accompanying mothers for PMTCT services	•Prioritizing those who come for PMTCT services as couples •Offering other routine medical check services	• Problem identified during the hospitals' performance review meetings • Designated staff to identify clients who came in as a couple • The couples were then fast tracked through the PMTCT services • Couples were educated on birth preparedness and support to HIV positive partner • Health screenings were offered to male partners	Male engagement in PMTCT services improved	5 facilities implemented this change
Issuance of invitation letters	Male partners were not accompanying mothers for PMTCT services	Issuance of invitation letters to male partners, asking them to attend ANC with their partners	• Problem identified during the performance review training • Asked administration to design and print the invitation letters • Designated a person to be in-charge of offering invitation letters to mothers • Invitation letters were offered to mothers attending ANC • Women whose male partners came with	Men responded positively to invitation letters	6 facilities implemented this change

			invitation letters were fast tracked through the ANC services		
Appreciation of the male partners who come with their wives for ANC visits	Male partners were not accompanying mothers for PMTCT services	Verbal appreciation of the male partners who come with their partners for ANC visits	• Problem identified during the hospitals' performance review meetings • Designated staff to identify clients who came in as a couple • The couples were then fast tracked through the PMTCT services • Couples were educated on birth preparedness and support to HIV positive partner • Health screenings were offered to male partners • Male partners were verbally appreciated afterwards	Observed improvements in males accompanying their partners	6 facilities implemented this change

4. Key Challenges

Is it is important to note that some improvement teams did face challenges in testing some of these changes. Challenging issues to the implementation of improvements in PMTCT included: limited human resources, stock out of commodities for PMTCT, and limited male partner involvement.

5. Moving Forward

Teams interested in improving PMTCT services should start off by reviewing the prioritized list of changes to implement in Tables 1–4. Implementation of improvements using the above

practices should be preceded by review and improvements in data quality hence why the need to constantly monitor quality of data through the coaching and mentorship mechanism.

The approach to improve PMTCT service delivery requires a multi-stakeholder approach to include participation from: health facilities, Primary health Development Agencies, Ministry of Health, and development partners to perform roles listed in the table below.

Health Facilities	• **Support for facility QI teams through routine coaching and mentoring** • **Engagement of facility leadership to ensure they prioritize eMTCT** • **Enhancement of supply chain management practices to ensure adequate stock of ARVs and other resources**
Community Teams	• Coordination, resource mobilization, capacity building, scale up, mentorship and supportive supervision
Ministry of Health	• Ensuring required tools, SOPs, guidelines and other resources are available throughout various levels of MoH • Coordination, capacity building, supportive supervision, resource mobilization, and supporting scale up
Development Partners	• Technical support, capacity building and availing resources to bridge gaps in eMTCT

Achievements Summary

- Patient waiting time decreased from 3-5 hours to 30 minutes to 1 hour across the 7 facilities.
- Uptake of ART for new HIV patients increased to 85% from 41% in Ikara General Hospital
- Appointment keeping increased in all hospitals
- There was improvements in quality documentation in all facilities.
- ART enrollment increased in all hospitals
- Polymerase Chain Reaction (PCR) results received on time increased; 95 % in Salamat hospital
- Observed improvements in number of babies enrolled in ART clinic
- Male Partner involvement in PMTCT have increased considerably in all the supported facilities
- Uptake of ART among HIV positive infants improved from 44% at baseline to 77% by the end of the project.