

Care for HIV-infected mothers and their infants in a rural district of Tanzania

FINAL PROJECT REPORT

July 2017 – September 2018



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Introduction

In 2013, Tanzania implemented “Option B+” recommendations for Prevention of Mother to Child Transmission of HIV (PMTCT): all pregnant and breastfeeding women are eligible for lifelong antiretroviral treatment (ART) regardless of their CD4 counts and clinical stage. Since then, major improvements have been noted in Tanzania. In 2014, 70% of pregnant women were counseled and tested for HIV, and among those HIV positive, PMTCT coverage was reported to be 90%. Despite these remarkable achievements, the MTCT rate in 2015 was 9%, leading to 7,200 new child infections. Thus, Tanzania did not reach the UNAIDS target to eliminate new pediatric infections by 2015. Moreover, Early Infant Diagnosis of HIV (EID) coverage was unacceptably low, with only 43% of HIV-exposed infants having an EID test done within the first 2 months of life.

In the Kilombero district, in southern Tanzania, the EID circuit had the following challenges:

- i) Kits to collect and store infants’ samples (dried blood spots (DBS)) were often out of stock
- ii) Transport of the samples to the reference laboratory was not consistently supported
- iii) The turn-around time of results was sometimes extremely long and the opportunity of timely diagnoses and start life-saving and health restoring ART to HIV-infected infants was lost in many cases.

To contribute to the improvement of the EID circuit we designed the project *Care for HIV-infected mothers and their infants in a rural district of Tanzania* that was awarded with the ESTHER Switzerland grant in March 2017. The project activities started in July 2017 and were planned for 12 months. In May 2018 the project was given a no cost extension to prolong the activities for three months (to September 2018). The specific objectives of the project are:

1. To improve HIV testing coverage in the ANC settings: reach over 6,000 pregnant women and increasing the HIV testing rate above 90% in the whole district.
2. To improve retention in care of HIV-infected mothers: reduce loss to follow-up to below 20%.
3. To establish an EID circuit at district level and offer reliable and timely EID for 200-230 HIV-exposed infants yearly.
4. To serve as a platform to generate reliable information concerning maternal and infant HIV care in rural Tanzania, to inform policy makers in Tanzania, and to support national policies.

In this report we summarize the activities done, the goals achieved and the challenges encountered.

Summary of the project achievements

In our proposal we listed three intended project results. Two of them have been reached and the results have exceeded by far our expectations. For one of the intended results, we have not been able to evaluate the success.

Intended result 1: Through the project's visits to the peripheral health centers and the optimization of the patients' flow and supply of HIV tests, we expect to reach over 6.000 pregnant women and increase the HIV testing rate above 90% in the whole district.

Rate of achievement: the project has reached over 12,000 pregnant women and has achieved an HIV testing rate of 98%. Even considering that the initial length of the project was 12 months, and we were able to prolong it to 14 months, these results are above the target.

Intended result 2: Through the awareness events and nurse-led phone calls to women not honouring their scheduled visits, we expect to reduce this loss to follow-up rate below 20%.

Rate of achievement: Unfortunately, we cannot provide reliable data on retention at the peripheral health centers. The Government data collection tools are not designed to capture this information. We have already communicated with the Ministry of Health with a proposal to update the data collection tool. Moreover, we proposed to have a separate data tool during the implementation of the project, but this was not acceptable to the health workers at the peripheral centers due to work load they already had. The impression of nurses and midwives working at the reproductive and child health clinics is that retention has improved, but as mention, we cannot validate these subjective idea.

Intended result 3: Through the project we expect to offer reliable, timely and district-based EID for these 200-230 HIV-exposed infants.

Rate of achievement: during the 14 month of the project implementation 625 HIV-exposed infants in the Kilombero district were tested with HIV DNA PCR. Results were back at the health centers after a median of 2 weeks, and in case of positive results, families were contacted in order to start antiretroviral treatment to the infant as soon as possible.

Activities

- **Specific task 1.** To improve HIV testing coverage in the ANC settings: reach over 6,000 pregnant women and increase the HIV testing rate above 90% in the Kilombero district.

✓ Activities:

- In close collaboration with the Tanzanian PMTCT and AIDS control program implementers, the project team exports the One Stop Clinic expertise in the estimation of needs, requesting, and documentation of usage of HIV tests.
- The project nurse assists the peripheral centers to organize the circuit of patients and samples and look for the best action plan to achieve the goal of universal HIV testing at the antenatal clinic.
- The project nurse and physician visit monthly the peripheral health centers to supervise the PMTCT and EID implementation.
- Health care providers at RCHCs constantly secured the supply chain for HIV testing kits.



✓ Goals achieved:

- More than 12,000 pregnant women were counseled and offered HIV testing on their first visit at the antenatal clinics in the district since the start of the project. The HIV testing rate of pregnant women in the district is now >95%. Data show a uniform increase in HIV testing across all health centres in the district.
- Patients' flow has been improved, shortening the waiting times and improving the satisfaction of both pregnant women and health workers.

✓ Challenges:



The overall PMTCT implementation and improvement is still challenged by the shortage of health care workers and the poor optimization and reallocation of available health workers who had undergone training or courses on PMTCT and pediatric HIV.

- **Specific task 2.** To improve retention in care of HIV-infected mothers: reduce loss to follow-up to below 20%.

- ✓ **Activities:**

- The professional counselor from the One Stop Clinic joins the project team in some of the visits to the health centers and provides informal training and supervision to the health workers.

- ✓ **Goals achieved and challenges:**

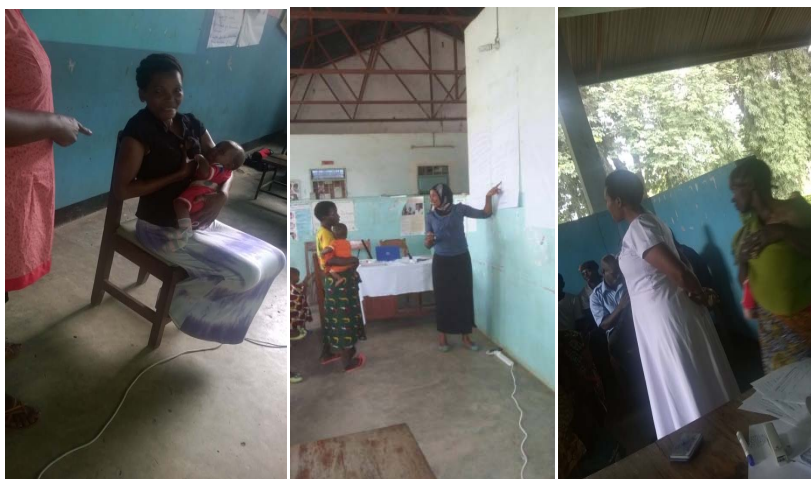
- We cannot provide reliable data on retention at the peripheral health centers because the government tool for data collection are not designed to capture this information especially for HIV infected mothers under PMTCT programs. We have already communicated with the Ministry of Health with a proposal to update the data collection tool.



- **Specific task 3.** To establish an EID circuit at a district level and offer reliable and timely EID for 200-230 HIV-exposed infants yearly.

- ✓ **Activities:**

- To operate the district EID circuit the project coordinates the following:
 - 2-weekly collection of samples for EID from the peripheral health centers.
 - 2-weekly performance of pro-viral HIV DNA PCR for EID of all samples collected in the district.
 - 2-weekly delivery of EID results from previous collection.



✓ **Goals achieved and challenges:**

- Since the beginning of the project samples are collected, analyzed and results returned to the health centers as planned with a constant turn-around time of **two weeks** (reducing the pre-project time dramatically). However, the tests have been done at the regional laboratory (in Morogoro) instead of the Ifakara Health Institute laboratory, as it was initially planned. This is a consequence of the following circumstances:
 - i) In May 2017, the Tanzanian Government implemented an EID testing laboratory at a regional level.
 - ii) The company producing reagents for EID could not provide reagents as needed due to technical issues in the production chain until March 2018 (the reagents were ordered to Abbott laboratories before July 2017)
 - iii) Unforeseen fruitful collaboration with district authorities and the USAID implementer in Tanzania. The collaboration has been materialized by supporting transport of infants' samples to the regional laboratory (see further explanation in the next section). In March 2018 the reagents to do EID were secured at the Ifakara Health Institute laboratory. However, we continued to analyze the samples in Morogoro because our laboratory is missing the Government electronic system to record and report the results to the Ministry of Health. After closure of the project, the reporting system is planned to be implemented within the next weeks from now (following of the electronic reporting device for viral load testing).
- Given these circumstances and in order to meet the goal of reduced turnaround time for EID, we adapted the initial plan as follows: a project member was going to collect the samples at the district health centers, was taking them to the regional laboratory,

bringing back the results and ensuring that results reached the health centers within a short time period.

- During the project period a total of **625 infants** have benefited from the EID circuit. This is high above our initial objective, emphasizing the impact of a well-coordinated district circuit. Almost 75% of infants (467/625) had their EID test done within 8 weeks of life. The turn-around time has been greatly reduced, allowing the timely initiation of ART to HIV- infected infants.
- **Specific task 4.** To serve as a platform to generate reliable information concerning maternal and infant HIV care in rural Tanzania, to inform policy makers in Tanzania, and to support national policies
 - ✓ **Activities:**
 - In the very beginning of the project we involved the local health authorities and USAID Boresha Afya (the USAID implementer in Tanzania) in the implementation of the project. We established collaboration with USAID Boresha Afya that allowed maximizing the efficiency and impact of the project. USAID Boresha Afya provided cars to travel regularly to all district health facilities and the regional laboratory, while the project covered the fuel and driver expenses.
 - The functioning of the project, challenges encountered, solutions proposed and data collected have been periodically shared and discussed with the district health authorities.



- ✓ **Goals achieved and challenges:**

- Informing the District Authorities on the possibility of connect IHI laboratory to National Aids Control Program (NACP) of Tanzania database for reporting and recording as the logistics to use the lab for district testing in the long run beyond project period.
- With this partnership, we have been able to reduce transport cost greatly and increase the acceptance of the project.
- Communication with the local health authorities have been strengthened, facilitating the sustainability of the project now that the NACP has reviewed all the necessary documents in IHI lab and verbally authorized EID testing at IHI lab for the district while waiting for formal documents.



Table 1: Data regarding HIV counselling and testing of pregnant women and their male partners at the Kilombero district health facilities during the project implementation period

		HIV counselling at 1 st antenatal clinic visit		HIV testing at the antenatal clinic		Pregnant women HIV testing rate (%)	HIV testing of male partners in relation to pregnant women (%)	New diagnosis of HIV infections	
		Pregnant women	Male partners	Pregnant women	Male partners			Pregnant women	Male partners
2017	Aug	961	662	1000	662	100*	66	65	20
	Sep	832	536	845	536	100*	63	66	5
	Oct	776	521	748	521	96	70	76	8
	Nov	787	515	783	515	99	66	50	8
	Dec	621	392	619	392	99.5	63	26	4
2018	Jan	866	601	867	601	100*	69	43	12
	Feb	825	537	825	537	100	65	44	4
	Mar	1169	525	1169	525	100	45	46	13
	Apr	820	569	812	569	99	70	47	4
	May	1031	667	1030	667	100	65	54	8
	Jun	900	586	895	586	99	66	54	7
	July	935	596	929	596	99	64	42	9
	Aug	794	600	778	600	98	77	55	13
	Sep	731	502	710	502	97	71	37	13
Overall		12,048	7,809	12,010	7,809	99	66	705	128

*Months where testing rate is > 100% is a consequence of women/male partners having an HIV tests done after their first antenatal visit

Summary of Table 1:

Through the implementation and activities of the project:

- ✓ More than 12,000 pregnant women have been counselled and tested for HIV in the Kilombero district
- ✓ 705 pregnant women were newly diagnosed to be living with HIV and were offered PMTCT
- ✓ HIV testing rate of pregnant women in the district is above the target of 95%
- ✓ Male partner testing rate was 66%

Table 2: Data regarding Early Infant Diagnosis of HIV at the Kilombero district health facilities during the project implementation period

		Number of infants tested with HIV DNA PCR	Number of infants tested \leq 8 weeks of age	Number of positive HIV DNA PCR results	Median Turn-around-time in weeks	Number of Infants enrolled for PMTCT
2017	Aug	62	37	3	2	32
	Sep	62	35	9	2	42
	Oct	54	43	3	2	66
	Nov	45	32	2	2	30
	Dec	34	29	0	2	25
2018	Jan	24	17	2	2	22
	Feb	56	38	2	2	21
	Mar	38	27	1	2	41
	Apr	44	32	3	2	31
	May	42	30	5	2	28
	Jun	21	25	1	2	15
	Jul	32	26	3	2	25
	Aug	60	49	2	2	43
	Sep	51	47	5	2	47
Overall		625	467	41	2	468

*Discrepancy in numbers between those who tested with pro-viral DNA PCR and enrolled in care is due to the following:

- i) There are a number of children < 9 months enrolled for PMTCT before commencement of the project and samples were collected during project period.
- ii) Poor recording in the government register books. (Number of infants tested with HIV DNA PCR is captured from the project data collection tool while number of enrollment captured from government tools)

Summary of table 2:

Through the implementation and activities of the project:

- ✓ 625 HIV-exposed infants have been tested for HIV with pro-viral DNA PCR with a median turn-around time of two weeks.
- ✓ 467 infants had their EID test done before 8 weeks of life (75% of all infants tested).
- ✓ 468 HIV-exposed infants were enrolled in care during the project period.

Lessons learned

The main lessons learned during the project implementation can be summarized as follows:

Sharing the aim of the project with all actors involved before starting the activities was vital for the success of the project. We had the opportunity to address some of the concerns of the local staff to ensure the well functioning of the activities to be implemented (i.e. optimizing the circuit of pregnant women attending the different antenatal clinic, offering extra training on HIV testing and counselling to midwives, adapting the locations where group and individual counselling had to take place, etc).

The **supportive supervision** established with the visits to collect the samples and the availability of the project team through the phone to discuss and address any challenge encountered was very successful. The coordination with all the centres was smooth and there were no major challenges that could not be solved.

Flexibility to adapt to the circumstances was fundamental. As explained above, we adapted the project to different unforeseen situations (i.e. change of the national EID circuit, very long delay of delivery of the laboratory reagents, etc). This flexibility not only resulted in the continuation of the well-functioning of the project, but also in a strong collaboration with USAID Boresha Afya and the local health authorities.

Impact

Through the project the model of integral care for HIV-infected mothers and their infants have been successfully implemented to the health centers. The numbers exposed above show that the project achievements go beyond what was planned; emphasizing that a simple but well coordinated intervention can have a major impact.

The training of the health workers on how to estimate the number of HV test kits that will be used and the reminders to timely place the orders resulted in a drastic reduction of test stock outs.

The adaptation of the circuit of pregnant women and male partners to each health centre reality resulted in a better organization and capability to offer all the services this population needs.

The two-weekly collection and delivery of EID tests and results was important to implement what was already recommended in the national guidelines: the performance of an EID at 6 weeks of life. Health workers and families now trust in the efficiency of this service and are prone to offer the test and to go back to the clinic for the results. Before, due to the very long turn-around time of results

some health workers were not offering the tests and many families were not going back to the clinic for results.

Sustainability

During the time period of ESTHER project, we established collaboration with the key stakeholders of HIV care within the district. These are the District governmental authorities (District Medical Officer and his team) and implementors of the global HIV programs (in Kilombero, Ulanga and Malyini Districts this is currently USAID Boresha Afya). So far, vertical HIV programs have functioned mostly independently. The mutual acceptance and collaboration between governmental institutions and non-governmental organizations not only on a national but also on a local level offers a huge benefit to achieve the goal of 90-90-90. ESTHER project has allowed a huge step in this direction, which includes sharing of activities such as sample transport, training activities and result transmission. In parallel, Ifakara Health Institute with its expertise in laboratory testing has become an official partner of the government for viral load testing for the 3 districts in the valley instead of transporting samples to the overcrowded and far regional laboratory, ensuring timely result delivery to the patient/clinician and via a direct electronic reporting system to governmental authorities. We are shortly before implementation of the same system for EID at our laboratory thanks to the collaboration within ESTHER project.

Collaboration has also greatly improved between staff of the different medical centers, allowing referral of patients if needed and interaction in case of stockouts and other challenges.

Outlook

The next step is implementation of the electronic reporting system for Early Infant diagnosis to offer EID at the laboratory in the district level. Additionally, we closely collaborate with the local health authorities and USAID Boresha Afya to make sure, results reach the patient timely and necessary measures are taken, if the result is positive. We plan to have a 'link person' ensuring smooth collaboration between the St Francis referral hospital / Ifakara Health Institute as a referral site and peripheral health centers. Planned projects focus on stigma in newly diagnosed young adults including pregnant females and young men.

The ESTHER Switzerland programme (<https://www.esther-switzerland.ch>) is implemented by the Institute of Social and Preventive Medicine (ISPM) of the University of Bern, on behalf of the Swiss Agency for Development and Cooperation SDC).