

# Enablers, Constraints and Extent of Implementation of the Elimination of Mother-to-child Transmission of HIV Policy Guidelines in Lira district; Application of a Policy Implementation Barometer

Noel Namuhani (✉ [noelnamuhani@gmail.com](mailto:noelnamuhani@gmail.com))

Makerere University, school of public health <https://orcid.org/0000-0003-0025-2753>

**Hamilton Kainga**

Makerere University school of public health

**Olufemi Obafemi**

Ibadan University

**Adeyemi Adelabu**

University of Ibadan

**Moses Mukuru**

Makerere University College of Health Sciences

**Doreen Tuhebwe**

Makerere University, school of public health

**Aloysious Ssenyonjo**

Makerere University, School of Public Health

---

## Research article

**Keywords:** EMTCT, HIV, Policy Implementation, Barometer, Lira, Uganda

**Posted Date:** September 21st, 2020

**DOI:** <https://doi.org/10.21203/rs.3.rs-57446/v1>

**License:**  This work is licensed under a Creative Commons Attribution 4.0 International License.

[Read Full License](#)

---

# Abstract

**Background;** Despite the adoption of Elimination of mother to child transmission (EMTCT) strategy in 2012, mother to child transmission of HIV remains one of the significant forms of new HIV infections among children in Uganda, accounting for 20% of new infections. However, the implementation of the EMTCT strategy in Uganda remains unclear and an under researched field. This study aimed at assessing the extent of implementation of EMTCT strategy, barriers and constraints in Lira district using the adapted Policy Implementation Barometer (PIB) approach.

**Methods;** This was a cross sectional study that employed both quantitative and qualitative data collection methods. A Policy Implementation Barometer tool developed by a project called Supporting Policy Engagement for Evidence-based Decisions (SPEED) for Universal Health Coverage in Uganda was adopted to assess the extent of implementation of EMTCT strategy. A total of 32 interviews with health facility managers were purposively conducted from a random sample of 20 health facilities offering Antenatal clinic (ANC) services in Lira district. Quantitative data was analyzed using STATA 14. Qualitative data was analyzed using thematic content analysis approach.

**Results;** Majority 17/32 (53.1%) of the respondents were health facility in charges, 14/32 (43.8%) were midwives and half 16/32 (50.0%) had been in service for more than five years. Half of the respondents perceived their facilities to have fully established programs for implementing EMTCT and only 2/32 (6.2%) perceived the EMTCT programs to be functioning optimally. The perceived level of EMTCT implementation was 80%. Almost all the respondents perceived the funding for EMTCT activities to be inadequate, untimely, and not sustainable. Only 4/32 (12.5%) of the respondents believed that the health workforce size was adequate to support EMTCT activities, 13/32 (40.6%) believed that health workers lacked the skills to provide EMTCT services.

**Conclusion/Recommendation;** Overall, the perceived extent of EMTCT policy implementation was high, however slow progress was reported in some of the key policy objectives due to a number of hindrances including inadequate staff and funding. Therefore, there is a need for strategies to increase the number of health workers for EMTCT and solicit for more funding for the implementation of EMTCT strategy.

## Background

Mother-to-child transmission (MTCT) of HIV remains a significant contributor to the HIV infections, accounting for 9% of new infections worldwide (1). It is reported that 160,000 children were newly infected with HIV in 2016, with 90% of the transmissions occurring in Sub-Saharan Africa (2). In Uganda, it is estimated that mother to child transmission contributes 20% of new HIV infections every year (3).

In 2012, the global focus shifted from prevention of mother-to-child transmission to elimination and Uganda adopted and enrolled the Elimination of Mother to Child transmission (EMTCT) strategy country wide (3). EMTCT activities are centered on eliminating all new infections of HIV from mother to child. The

virtual EMTCT of HIV means that fewer than 5% of babies born to HIV-positive pregnant women contract the virus (4).

This strategy has four prongs; 1) Primary prevention of HIV infection in women including those who are pregnant or breastfeeding, 2) Preventing unintended pregnancies in women with HIV by integrating family planning services into PMTCT programmes 3) Preventing vertical transmission of HIV and 4) Providing care, treatment and support for mothers with HIV and their children (4).

A number of countries have reported significant progress since adoption of EMTCT strategy in 2012 (5). However, some sub-Saharan countries still lag behind on a number of EMCT key indicators. In Uganda, the proportion of HIV-exposed infants tested for HIV remains low at 38% due to low retention of mother-and-baby pairs in EMTCT programs (6). Additionally, in 2016 only 67% of adults and 47% of children eligible for access were enrolled on ART, with a high unmet need for family planning among HIV positive women of 40%, which is far above the target zero unmet need (2). According to Lira district HMIS records, the HIV-positive rate among pregnant mothers was at 4.4%, and rate of mother-to-child transmission of HIV was at 1.6% in 2016 (7). However, since the roll out of EMTCT strategy, assessment of its implementation in most countries remains lacking (8).

A number of policies have been drafted and implemented but with limited evaluation (9, 10). Hence, the intended results of most public health policies have not always been achieved due to inadequate implementation (11).

This study adopted a Policy Implementation Barometer (PIB) approach to assess the extent of implementation from the providers' perspective. The PIB is a mechanism which is motivated by limited feedback between decision makers at various implementation levels (12). It was developed by a project under Makerere University School of Public Health called SPEED - Supporting Policy Engagement for Evidence-based Decisions (SPEED) for Universal Health Coverage (UHC) in Uganda. It has been applied in Uganda to study malaria, family planning and emergency obstetric care policies in Uganda (13).

This study sought to assess the perceived extent of implementation of EMTCT strategy, barriers and enablers of the implementation in Lira district and provide feedback to the decision makers and implementers on the priority areas for action, using the PIB.

## **Methods**

### **Study setting and design**

This was a cross-sectional study that involved both quantitative and qualitative data collection methods. The study was conducted in Lira district. Lira district is located in Lango sub-region in Northern Uganda and is bordered by the districts of Pader and Otuke in the North and North East, Alebtong in the East, Dokolo in the South and Apac in the West. Administratively, the district is composed of one county, municipal council, 9 sub counties and 4 divisions, 63 parishes and 20 wards in Lira municipality. It has a

total of 678 villages and 64 cells in the municipality. Lira district has a total population of 408,043 people (14). Lira district is served by 27 public Health facilities. It has a regional referral hospital, five health center IVs and nine health center IIIs with 14 health center IIs. With 11 private/NGO dispensaries, 51 clinics, 3 health centre III and 1 hospital. The geographical access to health care has remained stagnant and is limited to about 31.4% of the population living within 5 km radius of health facility. The district has 6 ART sites with medicines and supplies to provide ART services

### **Study population, size and sampling**

The study included facility managers and in charges of maternity and HIV clinics who were in charge of implementing the policy.

A total sample of all actors in the implementation of EMTCT in the district were targeted to be included in the study. A total of 20 Health facilities offering EMTCT services were included in the study while interviews were conducted for 32 managers were available for interviews. These were drawn from one Referral Hospital, 4 health center IVs, 20 Health center IIIs, and 7 Health center IIs.

The respondents were purposively selected to participate in the study based on their involvement in EMTCT activities. Health workers and program officers who had worked in HIV programs in the district for at least one year were included in the study. The potential respondents who refused to grant informed consent and those who were not available at the time of the visit were excluded from the study.

## **Adaption Of The Pib Data Collection Instrument**

The study adapted the PIB tool and approach by Hongoro et al 2018. The PIB tool is divided into 6 modules: 1) Overall Policy implementation, 2) Organizational implementation networks 3) Financing, 4) health workforces, 5) Medicines and supplies and 6) Service delivery. This study covered the above modules with the exception of organizational implementation network. The elements in the overall policy implementation were adopted from the EMTC guidelines (*see attached file for the tool used for data collection*)

## **Data Collection Methods**

A PIB adopted questionnaire having both open ended and close ended questions was administered to the Health workers and implementers. The research team who were male master's students had a brainstorming meeting so that they were familiar with the statement of the problem, objectives of the study, sampling procedure, data collection tools and plan for data collection and interview techniques. Questionnaires were checked while still in the field for completeness and those found incomplete were completed before the respondents are discharged. Questionnaires were filled and side notes were written especially for the qualitative questions. The interviews lasted for 30–45 minutes

# Data Management And Analysis

All the data collected was edited, coded and then checked for consistency by the 4 researchers. The quantitative data was entered in EPIDATA, and exported to STATA for cleaning and analysis.

Data was analyzed using STATA version 14. Descriptive and comparative statistics such as frequencies, proportions were used to summarize the study findings and show perceived implementation progress of the strategy and actual implementation gaps. The perceived extent of EMTCT implementation was measured by generating a total score composed of 17 strategies of the EMTCT policy as assessed by the Barometer tool and each strategy was scored on likert scale that ranged from 0 to 5. 0 representing do not know, 1 representing not yet established, 2 representing initial steps taken to implement, 3 representing partially established, 4 representing having fully established programs for implementing the strategy, and 5 representing the program functioning optimally. A total score of 85 was generated and then translated to a barometer scale by getting the mean scores. The overall mean score for EMTCT strategy implementation was obtained. Qualitative data collected through open-ended questions of the PIB tool, were analyzed using the content analysis approach, where subthemes and themes were identified as they emerged from the data and coded. The themes included around the facilitators and Barriers constraining implementation of emtct strategy.

## Results

A total of 20 health facilities were included in the study and these comprised of one regional referral hospital, 2 Health center IVs, 12 Health center IIIs, and 5 HC IIs. A total of 32 managers were interviewed. Majority 17/32 (53.1%) of the respondents were health facility in charges, 14/32 were midwives, and 11/32 (34.4%) were clinical officers. Half 16/32 (50.0%) had been in service for more than five years, the mean  $\pm$  SD years in service was  $7.5 \pm 5.5$  years. Majority, 22/32 (68.8%) had had a high level of engagement in HIV activities and half of the respondents had had a high level of engagement in EMTCT activities (Table 1).

Table 1  
; Background characteristics of the respondents

<b>Variable</b>	<b>Frequency = 32</b>	<b>Percentage (%)</b>
<b>Job title</b>		
Health facility In-charge	17	53.1
ANC in charges	14	43.8
HIV focal person	1	3.1
<b>Cadres</b>		
Midwife	14	43.8
clinical officer	11	34.4
Nurses	4	12.5
Medical doctor	2	6.3
Laboratory technician	1	3.1
<b>Health facility level</b>		
Referral Hospital	1	3.1
Health Centre IV	4	12.5
Health Centre III	20	62.5
Health Centre II	7	21.9
<b>Years in service</b>		
2 and below years	7	21.9
3–5	9	28.1
6 and above	16	50.0
<b>Level of engagement in EMTCT activities</b>		
Low	1	3.1
Moderate	15	46.9
High	16	50.0
<b>Level of engagement in HIV activities</b>		
Low	1	3.1
Moderate	9	28.1
High	22	68.8

## **Extent of EMTCT policy Objectives implementation**

Majority, 19/32 (59.4%) of the respondents reported that the facilities had fully established programs for testing of HIV positive women and initiation of ARVs for prevention of HIV transmission. Less than half 15/32 (46.9%) of the respondents reported that their facilities had fully established programs for early Infant diagnosis and Option B plus. Only 6/32(18.8%) of the respondents perceived their program for viral load testing and monitoring to be functioning optimally (Table 2).

Table 2  
; Perceived extent of EMTCT implementation

Extent of implementation of strategies	Don't Know	Not yet established	Initial steps taken	Partially established	Fully established	Functioning optimally
Has a well-established program for HTS among HIV positive women	1(3.1)	1(3.1)	0(0.0)	7(21.9)	19(59.4)	4(12.5)
Has a well-established program for FP among HIV positives	0(0.0)	2(6.3)	0(0.0)	12(37.5)	14(43.8)	4(12.5)
Has a well-established program for Access to HTS during ANC	0(0.0)	0(0.0)	1(3.1)	3(9.4)	24(75.0)	4(12.5)
Has a well-established program for Initiation of ARVs for prevention of HIV transmission	0(0.0)	3(9.4)	0(0.0)	4(12.5)	<b>19(59.4)</b>	<b>6(18.8)</b>
has a well-established program for Viral load testing and monitoring	0(0.0)	<b>7(21.9)</b>	1(3.1)	4(12.5)	14(43.8)	6(18.8)
Has a well-established program for ARV prophylaxis for HIV-exposed infants	0(0.0)	<b>6(18.8)</b>	2(6.3)	4(12.5)	17(53.1)	3(9.4)
has a well-established program for Safe delivery practices to decrease risk of infant exposure to HIV	0(0.0)	5(15.6)	3(9.4)	3(9.4)	16(50.0)	5(15.6)
Has a well-established program for EID	1(3.1)	<b>6(18.8)</b>	1(3.1)	4(12.5)	15(46.9)	5(15.6)
Has a well-established program for Option B plus	0(0.)	3(9.4)	2(6.3)	6(18.8)	15(46.9)	6(18.8)
Has a well-established program for male involvement in EMTCT	0(0.0)	2(6.3)	4(12.5)	12(37.5)	11(34.4)	3(9.4)

Extent of implementation of strategies	Don't Know	Not yet established	Initial steps taken	Partially established	Fully established	Functioning optimally
Has a well-established program for providing full range of EMTCT services	0(0.0)	2(6.3)	3(9.4)	10(31.3)	11(34.4)	6(18.8)

The overall mean score for EMTCT strategy implementation was 3.5 and half of the respondents perceived that their facilities had fully established strategies for implementing EMTCT. Only 2/32 (6.2%) of the respondents perceived the EMTCT programs to be functioning optimally, and 5/32 (15.6%) had taken initial steps to implement EMTCT policy objectives (Fig. 1).

Figure 1; *Perceived implementation of policy objectives (total score 85)*

Representing on the barometer scale the perceived extent of implementation, the overall level of EMTCT strategy implementation in Lira district was perceived to be 80% (Fig. 2)

Figure 2; *Barometer scale for overall perceived EMTCT strategy implementation*

## Constraints And Barriers To Emtct Strategy Implementation

The constraint is presented in domains of the policy implementation barometer including; Financing, Human resource, medicines and products and services delivery

**Financing;** Three out of thirty-two (9.4%) of the respondents agreed that funds were adequate to implement EMTCT essential activities and only 2/32 (6.3%) said that the funds were made available in a timely manner. Majority 18/32(56.2%) of the respondents disagreed that the expected funds for EMTCT activities were predictable for the planning periods and 6/32 (18.7%) believed that the financing program for EMTCT is sustainable in the near future (Table 3).

Table 3  
; Perceived financing factors contributing to implementation of EMTCT strategy

Variable (N = 32)	Disagree n (%)	Moderate n (%)	Agree n (%)	Don't know n (%)
Funds for EMTCT are adequate	20(62.5)	8(25.0)	3(9.4)	1(3.1)
The funds for activities are made available in a timely manner	19(59.4)	9(28.1)	2(6.3)	2(6.3)
The funds allocation for public education activities for EMTCT is favorable	19(59.4)	9(28.1)	2(6.3)	2(6.3)
Government budget is the main source funding for EMTCT	14(43.7)	6(18.8)	7(21.9)	5(15.6)
Funds for EMTCT activities is predictable for the planning period	18(56.2)	7(21.9)	3(9.4)	4(12.50)
The financing of EMTCT program activities is sustainable in the near future (1–3 years)	14(43.7)	5(15.6)	6(18.7)	7(21.9)
There is optimal value and benefits from the funds made available for EMTCT activities	10(31.3)	6(18.8)	12(37.5)	4(12.50)

From qualitative data; all the facility managers indicated that; limited resources, untimely release of funds as some of the hindrances for effective implementation of EMTCT strategy.

**Human resource for health;** Four out of thirty-two (12.5%) of the respondents believed that the health workforce size was adequate to support EMTCT activities, less than half 13/32(40.0%) of the respondents perceived the level of training and skills of the health workers to be adequate to support EMTCT activities. Majority 20/32(62.5%) of the respondents agreed that the health workers had essential guidelines and directives necessary for performing EMTCT activities and 20/32 (62.5%) of the respondents disagreed with the statement that salaries and wages for the workforce supporting EMTCT program were reasonable (Table 4)

Table 4  
; Perceived health workforce factors contributing to EMTCT strategy implementation

Variable (N = 32)	Disagree n (%)	Moderate n (%)	Agree n (%)	Don't know n (%)
Workforce size is adequate	16(50.0)	12(37.5)	4(12.5)	0(0.0)
Time devoted to EMTCT is adequate	9(28.1)	9(28.1)	13(40.7)	1(3.1)
The level of training and skills are adequate	11(34.4)	8(25.0)	13(40.0)	0(0.0)
The workforce is deployed equitably to cover communities with the higher service needs for EMCT	14(43.8)	12(37.5)	6(18.8)	0(0.0)
The workforce has the essential guidelines and directives necessary for performing EMTCT program activities	5(15.6)	7(21.9)	<b>20(62.5)</b>	0(0.0)
The Government is the main employer for the workforce supporting EMTCT program for the district/facility/country	9(28.2)	2(6.3)	<b>20(62.5)</b>	1(3.1)
The salaries and wages for the workforce supporting EMTCT program are reasonable	20(62.5)	7(21.9)	4(12.5)	1(3.1)
The tools needed by the workforce are sufficiently available for optimal performance of EMTCT tasks	11(34.4)	10(31.3)	11(34.4)	0(0.0)
The supervision for the FP program activities is optimal	11(34.4)	10(31.3)	10(31.3)	1(3.1)
Community-level workers are making a fair contribution to EMTCT program activities	6(18.8)	12(37.5)	13(40.0)	1(3.1)

From Qualitative data, Human resource factors came out as the main constraints affecting the implementation of EMTCT policy in Lira district. Most of the Health facility managers noted that health facilities are struggling with inadequate staffing levels, heavy workload, little pay and inadequate knowledge on EMTCT among staffs. This is illustrated by the quotes below;

*“Like in this facility I have only one midwife, sometimes mothers are many, you have to document, attend to patients, so you find that you are overwhelmed with too much work. ...if the government can recruit more midwives and nurses, there will be improvement in providing EMTCT services...” ( Ongica HC III In-charge )*

One of the Health facility in charge attested that;

*“The challenge we have is that there are no trainings on EMTCT and the staffs that attend some of the few trainings are not ever in facilities. So, most of our midwives have no enough skills to offer EMTCT services” (In-charge Amach HC IV)*

On the other hand, almost all of the facility managers reported that commitment of staffs, teamwork and support supervision facilitated the implementation of EMTCT services in the health facilities.

**Service delivery;** Over 75% of the respondents expressed satisfaction with service delivery program because it is able to reach out to all intended recipients while at the same time achieving its targets. However, 80% of the respondents pointed out lack of medicines, lack of funding, knowledge gap, lack of motivation due to low pay and understaffing, as health system related constraints to service delivery.

**Medicines and supplies;** Over 70% of facility in-charges especially in high level health facilities were of the view that implementation of EMTCT strategy is not being hampered by the supply chain of medicines and products (ARVs, FP commodities) as these supplies are always available in adequate amounts in almost all health facilities. However, few respondents particularly those from lower health facility level (Health center II) felt that implementation of the policy is affected by the supply chain of medicines (ARVs) as they are always forced to refer clients due to drug stockouts. The table below displays this information.

## Discussion

This study aimed at assessing the barriers, facilitators and extent of implementation of EMTCT policy in Uganda using a policy implementation barometer. In here we provide the perceived extent of EMTCT policy implementation and highlight the key facilitators and barriers hindering implementation.

In Uganda, the MOH adopted the EMTCT strategy aiming at having less than 5% of the babies born to HIV-positive pregnant women contract the virus (4). In this study, majority of the respondents reported to have fully established programs for implementing EMTCT strategy, with an overall perceived level of implementation of 80%. These findings illustrate a promising progress towards implementation of EMTCT policy in Lira district. This promising progress was attributed to commitment of staffs, team work and support from local leaders despite the so many challenges. These findings present a more promising trend compared to findings in South Africa which reported only Moderate degree of implementation of the policy (15). Similarly in Kenya, and other African countries significant progress has been reported towards implementation of EMTCT strategy since its adoption in 2012 (5, 16).

As Much as the perceived extent of implementation of the policy was generally reported to be high in this study, there was a perceived slow progress in the implementation of some of the critical policy objectives. For instance, less than half (46.9%) reported that their facilities had fully established programs for implementing early Infant diagnosis (EID) and Option B plus. Additionally, only 18.8% perceived their program for viral load testing and monitoring to be functioning optimally. This is comparable to a studies in Kenya that reported stagnant progress in implementing Option B plus and EID (16). However, in Ghana progress towards implementing Option B plus has been reported to be high (17). These study findings, point out the need for priority actions on some of the key policy objectives in order to accelerate implementation of the policy.

In this study, all health facility managers acknowledged that EMTCT implementation was being affected by the limited financial resources, with only 9.4% agreeing that funds were adequate to implement EMTCT. This was coupled by the fact that the available little funds were not being provided on time, and the overall financing program was viewed as unpredictable and not sustainable in the near future. In South Africa, unequal funding of the different activities of the policy was perceived to be a major constraint to effective policy implementation (15). Similarly, a study conducted in Nigeria, reported that lack of funding for EMTCT services at private and rural health facilities was a major barrier to implementing and use of EMTCT services (18). Policy implementation requires adequate financial resources for the administration, support, and enforcement (13). The availability and nature of policy financial resources influences the predisposition of policy implementers, who are responsible for executing the policy objectives (19). Inadequate financial resources has been reported to contribute to inadequate policy implementation (20). These findings underscore the need for policy makers to factor in adequate financial resource and their sources when formulating policies. Otherwise this substantially slows down the policy implementation process.

The availability of skilled human resource (health workers, administrators and support staff) directly influences the implementation process as these sometimes play the actual role of policy implementation (13). However, in this study, most of the respondents perceived the health workforce size to be inadequate to support essential activities of the EMTCT strategy. Furthermore, the few health workers are constrained by the heavy workload. Similarly, inadequate human resource capital was reported to be a major barrier to the implementation of EMTCT activities in South Africa, Nigeria and Malawi (15, 21). It was indicated that most facilities were below the staffing norms and could not cope with the high number of patients. These findings imply that there is need for strategies to expand human resources for health to work on EMTCT probably through task shifting redistribution of health workers and skilling up of more cadres to implement EMTCT policy.

Furthermore, the perceived level of training and knowledge of staffs on EMCTC was low (40.0%). It was highlighted that few trainings on EMTCT were conducted and the trainings do not involve the health workers involved in EMTCT. Similarly, In Malawi and Nigeria (21), the inefficiency of healthcare workers hindered EMTCT activities implementation. EMTCT programs suffered a series of set-backs due to under-trained healthcare professionals (21). It was further noted that EMTCT workers lack proper understanding of PMTCT principles and often fail to give quality counselling to women enrolled in the program (22). These findings underscore the need for training of health workers directly and those indirectly involved in EMTCT strategy implementation.

**Study Limitations;** This study only included health facility managers' perspective only and left out other district actors say district political leaders who declined participating in the study because they believed they did not know what EMTCT includes. However, the study adopted a barometer like assessment to provide quick diagnostics to support decision makers with general pointers of parameters that need detailed information or actions to accelerate progress of implementation.

## Conclusion

Overall, the perceived extent of EMTCT policy implementation was high, however little progress was reported in some of the key policy objectives which include Early Infant Diagnosis, Option B plus and Viral Load testing and monitoring due to both financial and human resource gaps. All health facility managers acknowledged that EMTCT implementation was being affected by the limited financial resources, coupled by the fact the available little funds are not provided on time. The overall financing program was viewed as unpredictable and not sustainable in the near future. Most of the Health facility managers noted that health facilities are struggling with inadequate staffing levels, heavy workload, little pay and inadequate knowledge on EMTCT among staffs. However, commitment of staffs, teamwork and support supervision facilitated the implementation of EMTCT services in the health facilities.

The policy makers need to pay attention to the underutilized strategies as well the factor inadequacy of the policy resources such as adequate financial resource and human and resources. Specific actions could pertain to how the resources can be obtained when formulating policies to ensure adequacy and sustainability of the financing program. There is also need to ensure that regular trainings of health workers on EMTCT are conducted and the right people attend the trainings to build skills for EMTCT policy implementation.

## Abbreviations

AIDS Acquired immune Deficiency syndrome

ARVs Antiretroviral drugs ART - Antiretroviral therapy

EID Early Infant Diagnosis

EMTCT Elimination of mother-to-child HIV transmission

HIV Human Immunodeficiency Virus

HMIS Health Management Information Systems

MOH Ministry of Health

MTCT Mother to Child Transmission

PMTCT Prevention of Mother to Child Transmission of HIV

PIB Policy Implementation Barometer

UAC Uganda AIDS Commission

UNAIDS Joint United Nations Programme on HIV/AIDS

## Declarations

**Ethical Considerations;** Approval to conduct the study was obtained from Makerere University School of Public Health Higher Degrees Research and ethics Committee. Permission was also sought from the District Health office. Respondents were read an informed consent which will clearly state the following 1) the purpose of the study, 2) what participation in the study would involve, 3) How confidentiality and anonymity will be maintained, 4) The right to refuse to participate in the study or to withdraw from the study without any penalty, 5) the benefits of participating in the study. Confidentiality and anonymity were maintained by the use of code numbers in the interviews

### Consent for publication

Not Applicable

### Availability of data and materials

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request

### Competing interests

The authors declare that they have no competing interests

### Funding

This research was funded my Makerere University, school of public health. However, the funders played no role in the design, implementation and writing of manuscripts.

### Authors' contributions

NN and HK conceived the study, NN, HK, OO, AA, collected the data, NN, HK, OO, AA analyzed and drafted the first manuscripts, NN, KH, OO, AA, MM, DT and AS read and approved the final manuscript.

### Acknowledgements

We thank Makerere University school of public health for the financial support. we also extend our appreciation to Lira district health office for giving us a suitable environment collect the data.

## References

1. WHO. Global guidance on criteria and processes for Validation. Elimination of Mother to Child Transmission of HIV and Syphilis Second edition ed. Geneva: WHO; 2017.
2. UNAIDS. Ending AIDS. progress towards the 90-90-90 targets. Global AIDS. Geneva: UNAIDS; 2017.
3. MOH. Elimination Of Mother To child Transmission of HIV Uganda Ministry Of Health 2015.
4. UNAIDS. Global Plan Towards the Elimination of New HIV Infections among Children by 2015 and Keeping Their Mothers Alive, 2011–2015. Geneva: Joint United Nations Programme on HIV/AIDS; 2015.
5. UNADS  
UNADS. Global HIV & AIDS statistics – 2017 fact sheet Online: UNAIDS; 2017 [03-08-2017]. Available from: <http://www.unaids.org/en/resources/fact-sheet>.
6. UAC. The Uganda Aids and HIV Country progress report July 2015-June 2016. Uganda Uganda Aids Commission 2016.
7. HMIS. Prevention of mother to child transmission of HIV. In: Health, editor. Lira district. Uganda: District Health office; 2017.
8. Taylor M, Newman L, Ishikawa N, Lavery M, Hayashi C, Ghidinelli M, et al. Elimination of mother-to-child transmission of HIV and Syphilis (EMTCT): Process, progress, and program integration. *PLoS Med*. 2017;14(6):e1002329.
9. Politics of European Union Regional Policy  
Bache I. Politics of European Union Regional Policy: Multi-Level Governance or Flexible Gatekeeping?: A&C Black; 1998.
10. Pritchett L, Woolcock M, Andrews M. Capability traps? The mechanisms of persistent implementation failure. 2010.
11. Kiiza L. Four big public policy challenges for Uganda. “ Policy design and implementation in developing countries”. Tokyo: National Graduate Institute for Policy Studies; 2007.
12. Spratt K. Policy implementation barriers analysis: conceptual framework and pilot test in three countries. 2009.
13. Hongoro C, Rutebemberwa E, Twalo T, Mwendera C, Douglas M, Mukuru M, et al. Analysis of selected policies towards universal health coverage in Uganda: the policy implementation barometer protocol. *Archives of Public Health*. 2018;76(1):12.
14. UBOS. The National Population and Housing Census 2014 – Main Report. Kampala, Uganda Uganda Bureau of Statistics; 2016.
15. Uwimana J, Jackson D, Hausler H, Zarowsky C. Health system barriers to implementation of collaborative TB and HIV activities including prevention of mother to child transmission in South Africa. *Tropical Med Int Health*. 2012;17(5):658–65.
16. Finocchiaro-Kessler S, Clark KF, Khamadi S, Gautney BJ, Okoth V, Goggin K, et al. Progress toward eliminating mother to child transmission of HIV in Kenya: review of treatment guideline uptake and

pediatric transmission at four government hospitals between 2010 and 2012. *AIDS Behav.* 2016;20(11):2602–11.

17. Dako-Gyeke P, Dornoo B, Addo SA, Atuahene M, Addo N, Yawson A. Towards elimination of mother-to-child transmission of HIV in Ghana: an analysis of national programme data. *Int J Equity Health.* 2016;15(1):5.
18. Anígilájé EA, Ageda BR, Nweke NO. Barriers to uptake of prevention of mother-to-child transmission of HIV services among mothers of vertically infected HIV-seropositive infants in Makurdi, Nigeria. *Patient Prefer Adherence.* 2016;10:57.
19. Nilsen P, Ståhl C, Roback K, Cairney P. Never the twain shall meet?-a comparison of implementation science and policy implementation research. *Implementation Science.* 2013;8(1):63.
20. Weaver RK. But will it work?: Implementation analysis to improve government performance. Contract. 2009.
21. Okoli JC, Lansdown GE. Barriers to successful implementation of prevention-of-mother-to-child-transmission (PMTCT) of HIV programmes in Malawi and Nigeria: a critical literature review study. *The Pan African Medical Journal.* 2014;19.
22. Levy JM, Webb AL, Sellen DW. " On our own, we can't manage": experiences with infant feeding recommendations among Malawian mothers living with HIV. *International breastfeeding journal.* 2010;5(1):15.

## Figures

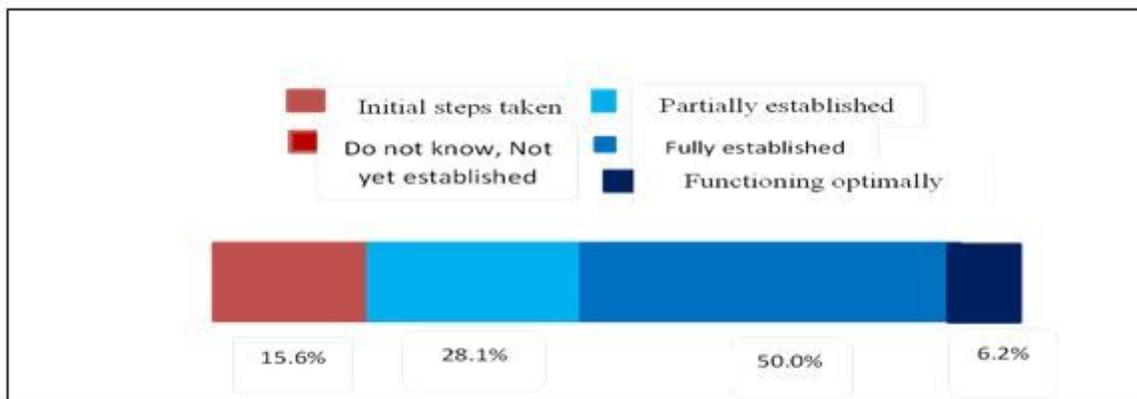
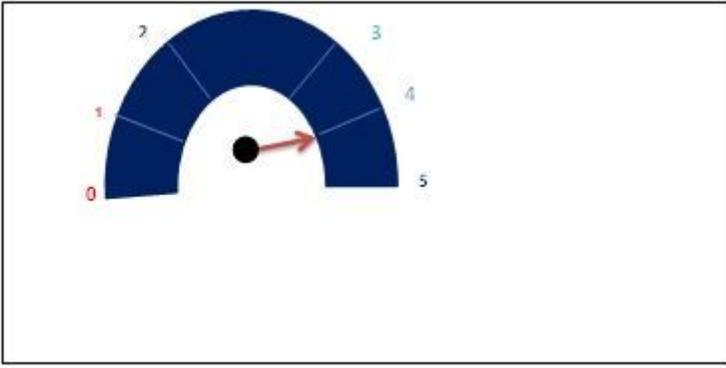


Figure 1

Perceived implementation of policy objectives (total score 85)



**Figure 2**

Barometer scale for overall perceived EMTCT strategy implementation

## Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- [PIBadaptedtoolforEMTCTmanuscript7September2020.pdf](#)
- [EMTCTManuscriptCOREQChecklist.pdf](#)