

Factors Associated with Uptake of HIV Testing Among HIV Exposed Infants in Goromonzi District, 2012

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DECLARATION

This dissertation is the original work of Evidence Gaka. It has been prepared in accordance with the guidelines for MPH dissertations for the University of Zimbabwe. It has not been submitted elsewhere for another degree at this or any other university.

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ABSTRACT

Factors Associated with Uptake of HIV Testing Among HIV Exposed Infants in Goromonzi District, 2012

Background: One of the national ART goals is elimination of pediatric AIDS through Early Infant Diagnosis (EID) and antiretroviral therapy where appropriate. National achievement for HIV test among HIV exposed infants between six and eight weeks of age (Dried blood spot) was 67% against a target of 60% for the year 2012. However, Goromonzi district achieved 12%. Two thirds of childhood deaths in Zimbabwe occur in infancy and Goromonzi district recorded 859 deaths in children under five years of age in 2012. The proportion of HIV exposed infants missing EID means pediatric ART cannot be scaled up. Factors associated with uptake of EID have to be established so as to increase pediatric ART and reduce childhood deaths.

Methods: A 1:2 case control study was conducted. A case was defined as an infant resident and born in Goromonzi district from the 5th of November 2011 up to the 4th of November 2012 (attained eight weeks of age in 2012) to HIV infected mother and did not have HIV test at six to eight weeks of age in 2012. A control was defined as an infant resident and born in Goromonzi district from the 5th of November 2011 up to the 4th of November 2012 (attained eight weeks of age in 2012) to HIV infected mother and had an HIV test at six to eight weeks of age in 2012. Primary care givers of HIV exposed infants were recruited for interviews to establish factors associated with uptake of DBS test among infants in Goromonzi district.

Results: 169 respondents were recruited, 54 were cases and 115 controls. Knowledge levels on HIV testing in infants among primary care givers were higher among controls than among cases (57% for cases, 79% for controls). Independent risk factors associated with non-uptake of HIV test among infants were belief that if a child is tested for HIV the child will be discriminated against O.R 3.61 (1.01; 12.9) and mother defaulted ART O.R 5.16 (1.48; 17.9). The independent protective factor associated with increased HIV test uptake was certainty on part of primary care giver that HIV test can be done to infants aged six to eight weeks in the district.

Conclusion: Knowledge levels among controls were better than among cases. Risk factors for infants not taking HIV test at six to eight weeks of age were the belief that once a child is tested the baby will be discriminated against and a mother who defaulted ART. The protective factor associated with increased HIV test uptake was certainty on the part of primary care giver that an HIV test could be done to infants in Goromonzi district.

Key words: Uptake, Dried blood spot test, Goromonzi

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ACRONYMS

AIDS: Acquired Immunodeficiency Syndrome

ANC: Antenatal Care

ART: Anti Retroviral Therapy

ARV's: Anti-Retroviral drugs

DBS: Dried Blood Spot

EID: Early Infant Diagnosis

HIV: Human Immunodeficiency Virus

HTC: HIV Testing and Counseling

IBM: Integrated Behavioral Model

MoH: Ministry of Health

NAC: National AIDS Council

NATF: National AIDS Trust Fund

OI: Opportunistic Infections

PCR: Polymerase Chain Reaction

PHC: Primary Health Care Center

PITC: Provider Initiated Testing and Counseling

PLWH: People Living With HIV/AIDS

PMD: Provincial Medical Director

PMTCT: Prevention of Mother To Child Transmission of HIV

SOP: Standard Operating Procedure

STI: Sexually Transmitted Infections

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CHAPTER 1: INTRODUCTION

1.1: Background

At least 500 000 HIV infected infants are born each year worldwide, mainly from poor countries with generalized epidemics¹. Globally, in 2008, 8% of children born to HIV infected mothers received early virological testing. Children consist of 6% of global Antiretroviral Therapy (ART) clients. This is below the 14% burden of children in need of ART². Those who do receive ART are commenced late, because of delays in HIV testing.

HIV/AIDS can be viewed more like other infectious diseases (normalization) where there is no need for extensive pretest counseling and seeking consent from the client. Early diagnosis is important for initiation of treatment provided informed consent and confidentiality have been assured³. Preventive strategies can be implemented timely. Encouraging more widespread HIV testing is consistent with the traditional public health approach of case identification, treatment, and promotion of strategies to prevent further transmission.

Opportunities to diagnose HIV infection in infants are being missed in the health system⁴. These opportunities for Early Infant Diagnosis of HIV infection (EID) arise at health facilities which provides prevention of mother to child transmission (PMTCT), antenatal care services (ANC), immunization services, nutrition and inpatient admissions. As countries scale-up EID, the processes of identifying these children should be introduced as a package of services in order to strengthen overall health systems. In order for health systems to provide comprehensive interventions for women and their children there is need to ensure that all children born exposed

to HIV have an HIV test done, and if infected, receive anti retroviral treatment and care. These opportunities should not be missed.

The benefit of EID through expanded access to HIV Testing and counseling (HTC) is the first step in identification of HIV uninfected exposed infants and infected infants to be enrolled into treatment and care ⁵. This facilitates follow-up of HIV uninfected exposed infants' care and prevention measures which are necessary to ensure they remain healthy and uninfected. It also improves psychosocial well-being of families and reduces stigma. Once HTC is done, HIV uninfected children will not be discriminated against and there will be less psychological distress. Chances of adoption of HIV uninfected orphans will be increased.

Optimizing follow up of HIV exposed infants can be done through Provider Initiated Testing and Counseling (PITC), Child health days and health systems strengthening. Scaling up in most countries will require a number of health systems strengthening interventions such as increasing laboratory capacity through provision of equipment, ensuring a reliable supply of reagents, the training of service providers and the establishment of networks that effectively link diagnosis with care.

WHO recommends that HIV test among exposed infants “be performed with a virological test at the age of 6 weeks or any time soon afterwards”⁶. The guidelines also recommend all infants with confirmed HIV infection to start ART irrespective of clinical or immunological stage.

1.2: Dried Blood Spot

Standard HIV antibody testing cannot identify infected infants in their first year of life, as it also detects maternal HIV antibodies that are transferred to the baby during pregnancy⁶. Tests that

detect HIV virus, (virological) are required for diagnosing infants. HIV DNA testing can be reliably performed on specimens collected onto filter paper, or dried blood spots (DBS), and sent to laboratories with capacity for testing. The use of DBS permits blood samples to be collected from outlying facilities to expand access to virological testing.

If blood specimens are to be used, these should be protected by transporting them rapidly at 2 to 10°C. However, where refrigeration is not available and transport is problematic, for example from outlying areas, DBS samples are the best solution. Nucleic acids in DBS have been shown to be stable at ambient temperatures for several months. DBS specimens' collections can be done at remote and rural areas and transported to central and regional laboratory for testing. In order to guarantee specimen quality for molecular analysis, specific training is needed in collection, drying, labeling and packaging of DBS.

1.3: Early Infant Diagnosis in Zimbabwe

Early Infant Diagnosis (EID) of HIV is the collection of DBS from HIV exposed infants at six to eight weeks of age. As per national guidelines in Zimbabwe, EID is recommended for all infants at six weeks of age or at first health care contact with infants born to HIV infected mothers; all breast feeding infants from HIV infected mothers and to all children in generalized epidemics where the mother's HIV status is not known⁷.

DNA Polymerase Chain Reaction (viral) tests are done in the public sector at the National Reference Laboratory in Harare. Because of transport and storage challenges, DBS are done at facility level and transported to Harare. A few drops of the infant's blood are collected by means of a heel stick according to Standard Operating Procedure (SOP). The specimen is then dried,

packaged and stored appropriately before transportation to Harare accompanied by requisite information. Results of this test will be recorded in the HIV Infant Diagnosis Clinic Register and the HIV Exposed Infant Follow – up Register. Once the infant is seen at the facility with the result, it is then recorded on the Child Health card. Goromonzi district is supposed to conform to these national logistics guidelines.

1.4: Problem Statement

Uptake of Dried Blood Spot test at national level increased in 2012 to 67% marginally surpassing a target of 60%. In 2011, the achievement at national level was 60% against a target of 40%.

Table 1: Comparison of Dried Blood Spot test Coverage; Goromonzi District, Mashonaland East Province and National Performance, 2010 to 2012

Year	2010		2011		2012	
	target	achieved	target	achieved	target	achieved
DBS test coverage (Goromonzi district)	-	-	40%	9%	60%	12%
DBS test coverage (Mashonaland East)	-	-	40%	27%	60%	43%
DBS test coverage (National)	-	14%	40%	60%	60%	67%

Targets and achievements at district and provincial level for the year 2010 could not be found.

Achievements for the province and district were below set targets for 2011 and 2012. The province however achieved higher coverage compared to Goromonzi district.

The Zimbabwe Demographic and Health Survey 2010/11 indicates under five mortality of “84 per 1000 live births, infant mortality rate of 57 per 1000 live births and a neonatal mortality rate of 31 per 1000 live births”²⁴. This shows that 66% of childhood deaths occurred during infancy.

Goromonzi district recorded a high mortality in under fives of 859 mainly HIV related deaths.

The table below shows 2012 PMTCT data for Goromonzi district;

Table 2: Dried Blood Spot test Coverage in Goromonzi District in 2012 by Quarter

Variable	Quarter 1	Quarter 2	Quarter 3	Quarter4	Total
Infants<2/12 old with DBS	88	136	154	132	510
#babies born to HIV+ mothers	405	320	239	205	1169
Proportion, babies taking DBS	0.22	0.43	0.64	0.64	0.44

Scale up of pediatric ART coverage will not be possible unless there is increased DBS for EID.

The 0.56 proportion of exposed infants means missed opportunity of commencing ART in a significant proportion of them.

CHAPTER 2: LITERATURE REVIEW

Few experimental studies give insight into the behavioral benefits of HIV testing⁶. While early testing is desirable, diagnosis has “beneficial and detrimental psychosocial effects, especially in instances of sero-discordance”⁸. In a study carried out by Bennetts in 1999 in Bangkok, it was shown that infants whose HIV status was known caused worry to their mothers. Women with HIV infected children had “higher levels of worry” than those with uninfected children⁶. EID offers better chances of survival and quality of life but timing of testing should be guided by whether the mother is psychologically prepared for the outcome or not⁸.

The beneficial role of support groups and counseling in adjusting to the mother’s own and her infant’s HIV status was demonstrated. Mothers of HIV negative infants stated that not knowing the baby’s HIV status made them excessively anxious over minor childhood ailments often leading them to (incorrectly) interpret these as signs of infant HIV infection. A negative infant HIV diagnosis relieved the emotional stress and fear associated with not knowing and motivated women to keep themselves healthy so they could take better care of the index infant⁸.

EID provides an opportunity for greater bonding between mother and infant. An HIV negative test was shown to improve interaction within family members and with the infant in a positive way. Family members would emotionally invest towards this child that would likely survive into adulthood as a result⁸.

The loss to follow up of infants and their mothers from the time mothers’ HIV diagnoses is made, during pregnancy and her return back after delivery for EID is a key challenge inhibiting

early initiation of pediatric ART in HIV infected infants. Barriers in following-up exposed infants were also investigated in rural Zambézia Province of Mozambique. The predictors identified in this study were, large household size (OR=1.30; 95% CI, 1.09-1.53), greater distance from hospital (OR=2.14; 95% CI, 1.01-4.51), maternal receipt of ART (OR=3.15; 95% CI, 1.02-9.73) and independent maternal source of income (OR=10.8; 95% CI, 3.42-34.0). The median age when the first HIV test was done among 105 HIV exposed infants was 5 months (inter-quartile range 2 to 7) and the HIV infected were 16%⁹. Maternal receipt of ART increased the likelihood of EID.

A frequently cited barrier to expansion of EID programs is the cost of the required laboratory assays. This is no longer applicable in most resource limited settings because of non-governmental aid. However, substantial implementation barriers exist in the form of personnel and infrastructure requirements¹⁰.

In Botswana, between June and December 2005, 1931 HIV exposed infants aged 6 weeks to 17 months had HIV tests done and 7% were HIV infected¹¹. Among infants less than 8 weeks old, 5% were HIV infected. 5% of infants who had HIV test performed in clinics were infected and 13% of infants tested for HIV in the hospitals were infected. The conclusion was that HIV testing of infants was well integrated into maternal and child care in the public health system. Researchers also concluded that the EID program in Botswana was well planned. In another study done in Botswana, routine HIV testing uptake was more than voluntary testing¹². Routine HIV testing led to increases in the uptake of HIV tests and PMTCT interventions.

Other studies have shown that most infants born exposed to HIV are not being monitored and followed up during post delivery period resulting in loss to follow up and missing out on

opportunities for life-saving services¹³. Experience from South Africa reveals that without a systematic and structured plan that includes early testing at 6 weeks, up to 85% of HIV exposed infants are lost to follow-up from clinics providing services for PMTCT by one year of age, with 75-80% already lost to follow-up at 6 months of age. The follow-up of known HIV exposed infants is not only necessary to identify those with HIV infection and to ensure timely commencement of treatment and care, but also to avoid postpartum HIV transmission and to improve infant health outcomes¹⁴.

In KwaZulu Natal, South Africa, of the 646 mothers who brought their infants for vaccinations, 90% agreed to have their infants to be tested for HIV but 57% subsequently returned for the HIV test results¹⁵. 51% mothers and infants subsequently had their HIV status reaffirmed when aged three months. Overall, 42% of infant DBS samples had maternal HIV antibodies indicating maternal infection. Of these, 22% DBS samples were positive for HIV DNA by PCR. This brings the total number of all infants tested to 9%. The conclusion of this study was that HIV screening of all infants at vaccination clinics is acceptable to the mothers and a feasible way for identification of HIV-infected infants early and referral for ART.

Another South African study showed that over a 2 year period 60% of all HIV exposed infants were lost to follow-up by the age 6 weeks and 85% by 1 year. This suggested that HIV-infected infants are not monitored closely and receiving timely access to ART because most of them were not routinely being followed at MCH services for their HIV infection to be detected in time to access treatment¹⁶.

In Zimbabwe, where 25% of pregnant women were HIV infected, introducing the opt-out strategy for HIV testing may have a far-reaching public health impact on PMTCT. Issues

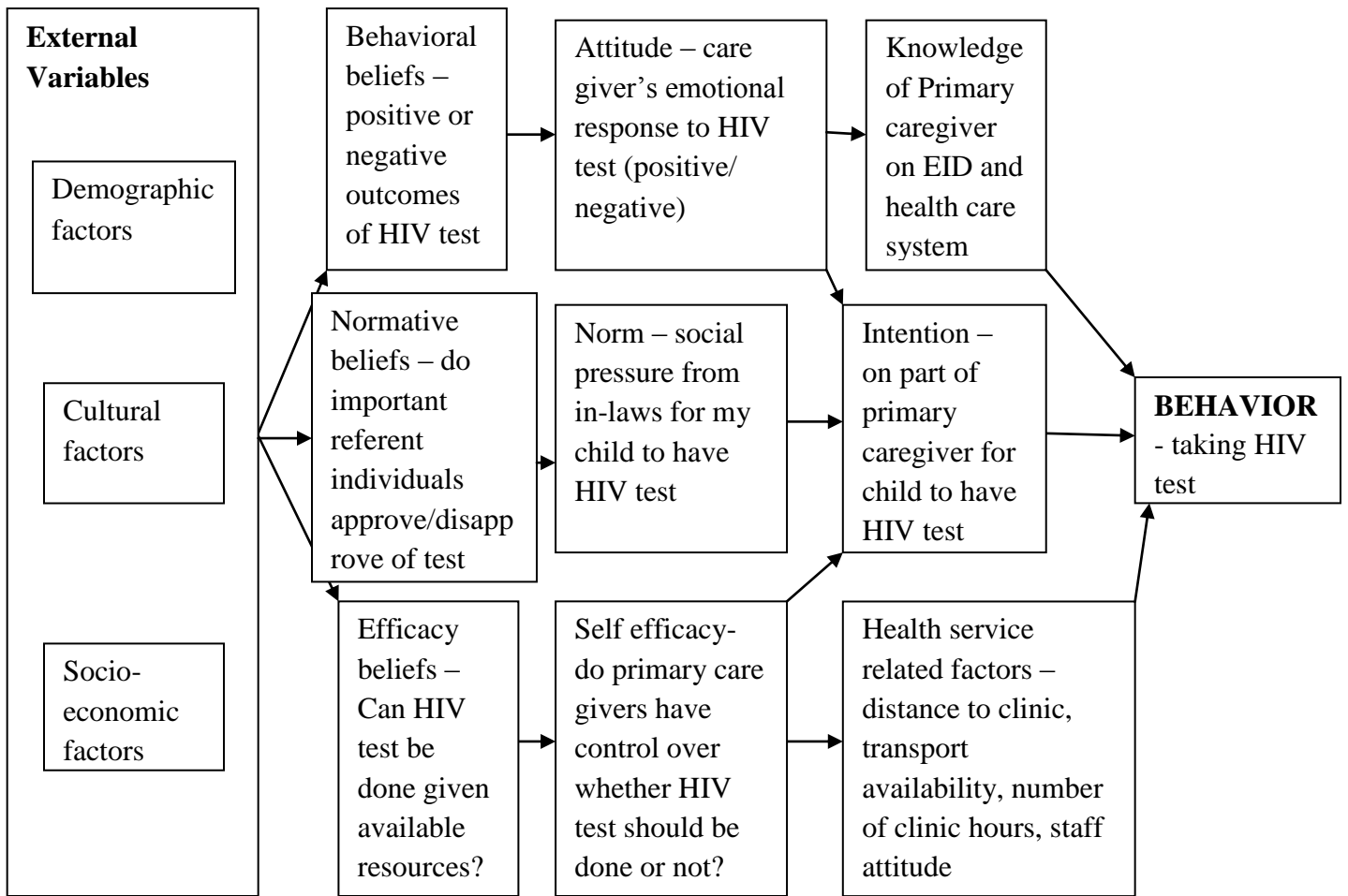
regarding stigma, quality of post-testing counseling and staffing must be considered¹⁷. The Zvitambo project in 2008 concluded that simple clinical algorithms can be used to identify infants with probable HIV infection in poor settings, especially those at risk of dying early so that they can be referred to appropriate facilities for further testing, treatment and care. Most HIV-uninfected infants can be identified at 6 months thereby increasing their chances of maintaining HIV infection-free survival provided they get appropriate support including focused infant-feeding counseling¹⁸. Although clinical algorithms are unreliable, using them in addition to CD4 count testing appears to improve diagnosis.

The Integrated Behavioral Model (IBM) has been successfully applied to understand behavioral intentions and behavior for HIV prevention behaviors in Zimbabwe in 2007¹⁹.

2.2: Problem Analysis

The IBM was used in the analysis of uptake of HIV test among infants (DBS) in Goromonzi district. This model illustrates how self efficacy, environmental and individual factors impact on behavior. Please see Figure 1 below;

Figure 1: The Integrated Behavioral Model



Adapted from: Theory at a Glance, a Guide for Health Promotion Practice, Second Edition (Croyle RT, Rimer B, Glanz K) 2005.

2.3: JUSTIFICATION

HIV infection follows a more aggressive course among infants and children than among adults. The findings of this study should help reduce mortality in children under five in Goromonzi. A deeper understanding of the factors contributing towards low uptake in early infant diagnosis will lead to adoption of recommendations that increase HIV testing among infants. The recommendations used to reduce mortality at district level can be adopted at provincial and national level to reduce mortality in children in Zimbabwe.

The causes of low uptake of EID are currently not fully understood despite the body of evidence justifying early diagnosis for early initiation of therapy and better outcomes in terms of reduced morbidity and mortality. It is not clear whether opportunities to test infants for HIV are being lost within the health system which should ensure all exposed infants are tested and that the health system delivers comprehensive interventions for infants. The laboratory capacity has to be assessed in terms of provision of equipment, reliability of supply of reagents, training of service providers and availability of transport for specimens. The psychosocial consequences of knowing HIV status among parents/primary caregivers has to be assessed. The benefits of knowing HIV status and barriers to follow up also need to be fully assessed as well as whether source of funding in the family and whether maternal receipt of ART affects EID.

This study seeks to establish the causes of low uptake of EID and once these causes are known, make appropriate recommendations to inform policy at district, provincial and national level.

2.4: Research Question

What are the factors associated with uptake of HIV test among HIV exposed infants in Goromonzi district?

2.5: Objectives

2.5.1: Broad Objective

To determine factors associated with uptake of HIV test among HIV Exposed Infants in Goromonzi District, 2012

2.5.2: Specific Objectives

1. To determine the demographic factors associated with uptake of HIV test among HIV Exposed Infants in Goromonzi district in 2012
2. To assess beliefs (behavioral, normative, efficacy) of primary care givers with HIV exposed children on taking the HIV test in Goromonzi district in 2012
3. To assess the level of knowledge of primary care givers on the importance of early infant diagnosis in care for exposed infants.
4. To assess health service related factors associated with uptake of HIV test among HIV Exposed Infants

2.6: Hypotheses

2.6.1: Null Hypothesis

There is no association between beliefs of primary caregivers that knowing child's HIV status when they are six to eight weeks of age in Goromonzi district in 2012 and early infant diagnosis

2.6.2: Alternate Hypothesis

There is association between beliefs of primary caregivers that knowing child's HIV status when they are six to eight weeks of age in Goromonzi district in 2012 and early infant diagnosis

CHAPTER 3: METHODS AND MATERIALS

3.1: Study Design

A 1:2 unmatched case control study was carried out

3.2: Study Setting

This study was carried out in Goromonzi district in Mashonaland East province for the study period 1 January to 31 December in 2012.

3.3: Study Population

- HIV exposed infants

3.4: Sources of Data

- Primary care givers of HIV exposed infants
- Records (HIV Infant Diagnosis Clinic Register, HIV Exposed Infant Follow – up Register, Child Health card and other supportive medical records)

3.5: Case Definition

Infant resident and born in Goromonzi district from the 5th of November 2011 up to the 4th of November 2012 (attained eight weeks of age in 2012) to HIV infected mother and did not have HIV test at six to eight weeks of age in 2012

3.6: Control Definition

Infant resident and born in Goromonzi district from the 5th of November 2011 up to the 4th of November 2012 (attained eight weeks of age in 2012) to HIV infected mother and had an HIV test at six to eight weeks of age in 2012

3.7: Sample Size Calculation

In a study done in KwaZulu Natal, Republic of South Africa¹⁵, the proportion of HIV exposed infants who were tested for HIV was 0.904. The minimum sample size for use in this study was calculated using the Dobson formula given below:

$$n = (Z_{\alpha/\Delta})^2 p(1-p) \text{ where } (n) \text{ was the sample size}$$

Therefore:

Proportion (p) of HIV exposed infants tested for HIV= 0.904

5% Error risk (Z_{α}) such that: $Z_{0.05} = 1.96$

5% Precision such that: $\Delta = 0.05$ (for a 2 sided confidence interval)

$$\begin{aligned} n &= (1.96/0.05)^2 * (0.904) * (1-0.904) \\ &= 134 \end{aligned}$$

Therefore 134 controls (HIV exposed infants who took HIV test in infancy in Goromonzi district in 2012) plus 67 cases (HIV exposed infants who did not take up HIV test at 6 to 8 weeks of age) were the minimum sample size to be enrolled for the study.

The total minimum sample size for this study was therefore 201 respondents.

3.8: Sampling Methods

3.8.1: Selection of Cases

HIV Infant Diagnosis Clinic Registers for all health facilities were serially consolidated (one health facility after the other to ensure proportional representation during systematic selection). HIV exposed infant follow-up registers were also serially consolidated. From a total of 1169 HIV exposed infants in the district, 659 were identified as cases and 510 were identified as controls. The 659 cases so identified were listed in the order they appeared in the consolidated register. A sampling interval of four was used (659 cases divided by 139 cases initially required). 165 cases were to be recruited as respondents. Using the lottery method, the first case was selected from the first four. Thereafter, every fourth case was selected until there were 165 cases. The cases so identified were followed up to their communities through use of documented addresses and assistance from Village Health Workers.

3.8.2: Selection of Controls

A list of 510 controls was compiled from the consolidated HIV infant diagnosis clinic register in the order they appeared. A sampling interval of three was used (510 controls divided by 134 controls initially required). 170 controls were to be recruited. Using the lottery method, the first control was selected from the first three. Thereafter, every third control was selected until there were 170 controls. The controls so identified were followed up to their communities through use of documented addresses and assistance from Village Health Workers.

3.9: Inclusion and Exclusion Criteria

3.9.1: Inclusion Criteria

- Infants that were eligible for HIV test in 2012 (aged 8 weeks in 2012)
- Infants born from 5 November 2011 up to 4 November 2012 resident in Goromonzi district

3.9.2: Exclusion Criteria

- Any child who died before eight weeks of age in 2012
- Non residents of Goromonzi district in 2012
- Any child with a mentally unstable care giver
- Any child with a severely ill care giver

3.10: Pretesting of Instruments and Data Collection Techniques

3.10.1: Pretesting Instruments

Pretesting of instruments was done in another district in Mashonaland East (Seke). Instruments and methods were adjusted appropriately; Q34 'Husband' was changed to 'father of this child', 42e 'at church' was deleted, 56b certain was changed to 'uncertain' and the same was done for questions 57b, 58b, 68b, 69b, 70b, 74b, and 75b.

3.10.2: Data Collection Techniques

- Interviewer administered questionnaires were used to assess socio-demographic data, beliefs and knowledge of primary care givers

- A checklist was used to assess some health service related factors (availability of ART commodities, personnel appropriately trained in ART, transport for specimens, number of sites offering DBS test)
- Discussions using a guide were held with key informants in Goromonzi district and Provincial Medical Director (PMD)'s office Mashonaland East

3.11: Data Analysis

Epi info version 3.5.1 was used to summarize data by generating means, frequencies and proportions. Risk was measured by calculating Odds ratios (OR). The precision of these population estimates was provided by constructing 95% confidence intervals (CI). Significance of differences in means and proportions were done at 5% significance level.

Stratified analysis was done to check for confounding and assess for interaction by calculating stratum specific odds ratios and comparing them with crude odds ratios for background variables such as age, gender, level of education and income which are common confounders in this type of study. Logistic regression analysis was done to control for confounding. For those variables where there was no effect modification the adjusted odds ratios were reported as the final measures of association.

Qualitative data was sorted and analyzed manually.

A Likert scale was used in scoring some responses in the integrated behavioral model.

Respondents specified their level of agreement/certainty or disagreement/uncertainty on a symmetric/bipolar scale for a series of statements/variables (from strongly disagree/strongly uncertain, disagree/uncertain, neutral/undecided, agree/certain to strongly agree/certain)

3.12: ETHICAL CONSIDERATION

- Written informed consent was sought from all primary care givers interviewed
- Respect of choice on whether to participate or not was maintained
- Confidentiality was assured and maintained by holding interviews in secluded rooms at their nearest clinics or in their homes. All identifying data on questionnaires was omitted

3.13: PERMISSION TO PROCEED

Permission to carry out the study was sought from the PMD for Mashonaland East, the Health Studies Office, JREC and the Medical Research Council of Zimbabwe.

CHAPTER 4: RESULTS

4.1: Response Rate

Table 3: Comparison of Sample Size at Design stage and Achievement on Recruitment

Sample Size	Cases	Controls	Total
Calculated during design	134	134	268
Achieved (recruited)	54	115	169
% recruited (of initially calculated)	40%	86%	63%

The recruitment was below 100% as some study participants were unavailable or could not be located during data collection period. Further searches could not be conducted for those who could not be located as there was limited time within which to conduct the study. Repeat visits could not be made for those unavailable during data collection as time remained a limiting factor. 14 primary care givers refused to participate in the study (11 primary care givers for the cases and three for controls). This gives a response rate of 83% (54/65) for cases and 97% (115/118) for controls.

4.2: Descriptive Epidemiology

Table 4: Socio-demographic Characteristics of Primary Care Givers in Goromonzi District

Variable	Category	Cases n= (%)	Controls n= (%)	p-value
Sex	Females	49(91)	107(93)	0.30
	Males	5(9)	8(7)	
Age group (years)	≤20	7(13)	10(9)	0.00
	21-25	25(46)	15(13)	
	26-30	17(32)	35(30)	
	≥31	5(9)	55(48)	
*Level of education	Nil to Primary	35(65)	87(76)	0.06
	Secondary to tertiary	19(35)	27(24)	
**Occupation	Formal	12(24)	16(14)	0.08
	Informal	39(76)	97(86)	
Marital status	Married	37(69)	83(72)	0.44
	Single	5(9)	7(5)	
	Divorced	7(13)	9(8)	
	Widowed	5(9)	16(15)	
Religion	Nil	4(7)	7(6)	-
	Apostolic	25(46)	36(31)	
	Pentecostal	14(26)	34(30)	
	***Traditional	11(21)	38(33)	

*Data missing for the level of education for the primary care giver of one control

**Some primary care givers were not employed (whether formally or informally)

***Traditional Christian Churches refers to the Catholic Church, Methodist Church, Dutch Reformed Church in Zimbabwe and Anglican Church.

Differences in age groups for cases and controls were statistically significant. Primary care givers for controls were generally older than Primary Care Givers for cases.

Table 5: Level of Knowledge among Primary Caregivers of HIV Exposed Infants in Goromonzi District

Variable	Cases n=54 n(%)	Control n=115 n(%)	p-value
Correctly citing when baby should be reviewed after discharge following delivery	21(39)	54(47)	0.02
Correctly citing when baby should have an HIV test	28(52)	71(62)	0.09
Correctly citing where babies are taken for HIV test	31(57)	90(79)	0.003
Correctly citing when cotrimoxazole prophylaxis should be commenced	32(60)	91(80)	0.007
Correctly citing ARV prophylaxis	40(74)	63(55)	0.01

Controls were more knowledgeable than cases for 4 out of 5 variables and the differences in knowledge levels were statistically significant at 5% level of significance.

4.3: Bivariate Analysis

Table 6: Socio-demographic Factors of Primary Care Givers Associated with Uptake of HIV test among Infants in Goromonzi District, 2012

Variable	Category	Case	Control	Odds Ratio	95% C.I.
Marital Status	Married	17	31	1.24	(0.61;2.52)
	No partner	37	84		
*Mother defaulted ART	Yes	27	20	8.43	(3.64;19.54)
	No	12	75		
**Father's education level	≤primary	7	13	1.15	(0.42;3.06)
	≥Secondary	47	100		
Father's employment status	Informal	17	64	0.29	(0.14; 0.79)
	Formal	29	32		
***Father's HIV status Known	Yes	28	69	0.67	(0.35;1.35)
	No	23	39		
Mother alive	Yes	48	105	0.76	(0.26;2.21)
	No	6	10		
Mother on ART	Yes	38	83	0.92	(0.45;1.87)
	No	16	32		

*Missing data is for mothers who were never commenced on ART

**Missing data is when primary care givers did not know level of education of the father of the control

***Missing data is when care giver indicated father of case/control had died

Mothers who do not default ART are more likely to have their children tested for HIV between six and eight weeks of age than mothers who default ART. Children whose fathers are informally employed are more likely to take HIV test at six to eight weeks than children whose fathers are formally employed probably because they have more time to attend to their children's health needs and be supportive of tests requested. The two findings were statistically significant.

Table 7: Beliefs of Primary Care Givers Associated with non-uptake of HIV test among HIV exposed infants in Goromonzi District, 2012

Variable	Category	Case	Control	O.R	95% C.I
Caring about child getting tested for HIV	Yes	14	95	0.07	(0.02; 0.22)
	No	12	6		
Knowing child's HIV status causes stress	Yes	46	70	3.61	(1.56; 8.37)
	No	8	44		
Knowing child's HIV status is helpful	Yes	14	57	0.34	(0.17; 0.70)
	No	40	56		
Belief partner wanted child to have HIV test	Yes	32	97	0.21	(0.096; 0.458)
	No	22	14		
Belief child tested HIV will be discriminated	Yes	27	40	2.60	(1.21; 8.59)
	No	14	54		
Certainty HIV test can be done in the district	Yes	44	106	0.28	(0.09; 0.82)
	No	9	6		
A heel prick during HIV testing is harmful	Yes	16	26	1.02	(0.486; 2.14)
	No	38	63		

Respondents with beliefs that knowing child's HIV status is helpful, partner wanted child to have an HIV test were more likely to take their children for HIV test than those who did not share these beliefs. Respondents who were certain HIV test for children aged six to eight weeks could be done in the district were more likely to have their children tested than those who were not certain.

Respondents with beliefs that knowing child’s HIV status and that once child is tested will be discriminated were less likely to have their children tested than those who did not believe this.

Table 8: Norms of Primary Care Givers Associated with non-uptake of HIV test among HIV exposed infants in Goromonzi District, 2012

Variable	Category	Case	Control	O.R	95% C.I	p-value
Partner would support that child takes HIV test	Yes	17	48	0.40	0.19; 0.85	0.009
	No	29	33			
In-laws would support that child takes HIV test	Yes	24	53	0.80	0.42; 1.57	0.27
	No	29	52			
Friends would support that child takes HIV test	Yes	25	50	1.1	0.56; 2.13	0.39
	No	26	57			
Society expectation is child takes HIV test	Yes	42	102	0.45	0.18; 1.1	0.04
	No	11	12			
Caregiver fulfils partner expectation child takes test	Yes	32	85	0.5	0.25; 1.01	0.03
	No	21	28			

*Missing data was when primary care givers ‘did not know’ whether the parent/in-law/friend of the case/control was for or against norm requested

Important referent individuals such as partners, in-laws and society in general influence primary care givers to take their infants for HIV tests. Friends achieved the opposite.

Table 9: Self Efficacy of Primary Care Givers Associated with non-uptake of HIV test among HIV exposed infants in Goromonzi District, 2012

Variable	Category	Case	Control	O.R	95%C.I	p-value
Certainty respondent wants child tested for HIV in infancy	Yes	22	80	0.28	0.14;0.56	0.000
	No	32	33			
Certainty respondent can overcome pressure from in-laws	Yes	36	70	1.47	0.57;3.80	0.22
	No	7	20			
Certainty respondent will take forthcoming child for HIV test	Yes	27	61	0.38	0.18;0.81	0.007
	No	23	20			
Respondent's control over whether child will be tested or not	Yes	29	73	0.26	0.12;0.57	0.000
	No	24	16			
Respondent's decision to have child tested at 6-8 weeks of age	Yes	33	69	0.48	0.23;0.48	0.03
	No	21	21			

Respondents' beliefs in taking their children for HIV tests led them to actually take them for the test. These findings were statistically significant.

4.3: Health Service Related Factors Associated with Uptake of HIV Test among HIV Exposed Infants born in Goromonzi District, 2012

All health facilities (26) in the district were offering DBS test for EID. All babies brought to health facility during 2012 accessed service (DBS test) on day of visit.

Table 10: Health Service related Factors associated with Uptake of DBS test

Variable	Category	Cases	Controls	O.R	95% C.I
Distance to nearest health facility	<5km	24	54	0.71	(0.41; 1.08)
	≥5km	30	61		
*Method of accessing nearest health facility	Ambulance/ drive	2	6	0.67	(0.13; 3.45)
	Walk	17	23		
	public transport	35	82		
**Follow up of HIV exposed infants	No	6	8	1.9	(0.63; 5.93)
	Yes	37	95		
***Charged user fees	No	16	58	0.42	(0.21; 0.84)
	Yes	35	53		

*Missing data is when access to nearest health facility was by at least three means

**Missing data is when follow up visits were done outside the 6 to 8 weeks of age of child

***Missing data was when care givers had indicated they had paid user fees at some point and had not on other visits

Primary care givers within 5km distance to health facility were more likely to take their children for HIV test at six to eight weeks of age than those further than 5km from health facilities. User fees of USD2 are charged at local council run health facilities per visit. This has been justified to go towards security at health facility (USD1) and administration costs (USD1). These facilities

fall under the control of Ministry of Local Government not Ministry of Health where the policy is not to charge for HIV and AIDS related services.

Follow up of HIV exposed infants through Village Health Workers (VHW) and other community workers were done with assistance from EHTs and nursing staff. Effectiveness of this method of follow up is yet to be assessed. Reagents and related accessories for Dried Blood Spots (DBS) at health facilities in the district throughout 2012 were reported available. Samples were collected from HIV exposed children on any week day as they attended health facilities from six weeks of age. Availability of transport to collect DBS samples averaged once per month per health facility. This is being done by DHL and the efficient arrangement is done at head office MoH.

Table 11: Health Worker related Factors associated with uptake of Early Infant Diagnosis in Goromonzi District

Variable	Category	Case	Control	O.R	95% C.I	p-value																																				
Friendly health staff at nearest facility	No	19	14	3.80	(1.74; 8.50)	0.000																																				
	Yes	35	99				Helpful health staff at nearest facility	No	3	5	1.30	(0.30; 5.57)	0.37	Yes	51	109	Health staff explain issues in plain language	No	6	5	2.63	(0.76; 9.02)	0.07	Yes	48	105	Health staff interpret results before discharge	No	7	9	1.74	(0.61; 5.00)	0.16	Yes	46	103	Health staff assess newborns before discharge	No	1	12	0.16	(0.02; 1.25)
Helpful health staff at nearest facility	No	3	5	1.30	(0.30; 5.57)	0.37																																				
	Yes	51	109				Health staff explain issues in plain language	No	6	5	2.63	(0.76; 9.02)	0.07	Yes	48	105	Health staff interpret results before discharge	No	7	9	1.74	(0.61; 5.00)	0.16	Yes	46	103	Health staff assess newborns before discharge	No	1	12	0.16	(0.02; 1.25)	0.02	Yes	53	101						
Health staff explain issues in plain language	No	6	5	2.63	(0.76; 9.02)	0.07																																				
	Yes	48	105				Health staff interpret results before discharge	No	7	9	1.74	(0.61; 5.00)	0.16	Yes	46	103	Health staff assess newborns before discharge	No	1	12	0.16	(0.02; 1.25)	0.02	Yes	53	101																
Health staff interpret results before discharge	No	7	9	1.74	(0.61; 5.00)	0.16																																				
	Yes	46	103				Health staff assess newborns before discharge	No	1	12	0.16	(0.02; 1.25)	0.02	Yes	53	101																										
Health staff assess newborns before discharge	No	1	12	0.16	(0.02; 1.25)	0.02																																				
	Yes	53	101																																							

*Missing data for above table were for the response ‘sometimes’ from primary care givers

Primary care givers were more likely to take their children for HIV test at six to eight weeks of age because of friendly and helpful health staff than when they felt health staff was unfriendly and unhelpful.

4.4: Stratified Analysis

This was done to control for confounders and assess for effect modification as this could not be done at design stage.

Table 12: Relationship between Mother who Defaulted ART and her Child not having HIV test between 6 and 8 weeks of Age in Goromonzi district in 2012 Stratified by Mother’s Level of Education

Variable	Category	Took HIV test		Stratum specific O.R	95% C.I	p-value
		Yes	No			
Stratum 1: Level of Education, Primary and below						
Mother defaulted ART	Yes	13	8	13	2.3; 72.1	0.001
	No	2	16			
Stratum 2: Level of Education, Secondary and above						
Mother defaulted ART	Yes	14	12	6.8	2.4; 18.8	0.000
	No	10	58			

Crude O.R for mother who defaulted ART and child taking HIV test between six and eight weeks of age (95% C.I) = 8.3 (3.59; 19.29). The relationship between mother who defaulted

ART and child taking HIV test was modified by mother's level of education. The crude odds ratio 8.3 lies between the two stratum specific odds ratios 6.8 and 13 and the difference between the two stratum specific odds ratios is more than 10%. This implies effect modification. So the stratum specific odds ratios 6.8 and 13 are true measures of association for the relationship between mothers who defaulted ART stratified by mother's level of education.

4.5: Multiple Logistic Regression

Multiple logistic regression was done to control for confounders and assess for effect modification.

Table 13: Independent Factors Associated with Non-uptake of HIV test among HIV exposed Infants in Goromonzi District

Factor	Crude OR (95% C.I)	Adjusted OR (95% C.I)	p-value
Belief child tested HIV will be discriminated	2.60 (1.21; 8.59)	3.61 (1.01; 12.9)	0.048
Certainty HIV test can be done in the district	0.28 (0.09; 0.82)	0.15 (0.03; 0.74)	0.02
Mother defaulted ART	8.43 (3.64; 19.54)	5.16 (1.48; 17.9)	0.010

Belief that once a child is tested the baby will be discriminated against and a mother who defaulted ART were independently associated with decreased HIV test uptake among infants in Goromonzi district. Certainty on the part of primary care giver that an HIV test could be done to infants in Goromonzi district was independently associated with increased uptake of DBS test among infants in Goromonzi district.

CHAPTER 5: DISCUSSION

Poor response rate among cases in this study may be a reflection of poor health seeking behavior among those who delay taking HIV tests and those who never get to seek the service. Poor uptake of HIV tests among infants was reported by W.H.O in 2009². Strategies that have been put in place show a steady increase in uptake. However, this remains below set targets in some parts of Zimbabwe.

Age at first marriage in Goromonzi district was small for all respondents (20 years, $Q_1=18$; $Q_3=23$). This may be related to the level of education whereby only six respondents reached tertiary education in the study population. Median age of primary care givers for cases was smaller compared to median age of primary care givers for controls. Primary care givers for controls are more likely to be more mature and accept their children take HIV tests compared to primary care givers for cases that were younger and may be in denial that their children may be HIV infected. Some young primary care givers may not want to know HIV status of their HIV exposed children or may be satisfied as the child may not have shown any signs of ill health.

Primary care givers who took their children for HIV test at the recommended time were more knowledgeable on review dates for discharged newborns and where to take children for HIV test and these results were statistically significant. The level of knowledge could be helping in making decisions on taking HIV exposed infants for HIV test. There was no statistical difference between the two groups on correctly citing when HIV test should be carried out. This may suggest that it is more important to know where HIV tests for children are done and the review dates than knowing actual date for HIV test. Care givers who took HIV exposed infants after

eight weeks did so mainly because the child had become sick. This is consistent with findings by DeCock KM in 1998³.

HIV exposed infants being cared for by a primary care giver staying with a partner (being married) were less likely to be tested for HIV than infants cared for by mothers with no partner (single, divorced or widowed). This could be explained by stigma associated with the HIV test. The primary care giver has to seek permission from the father and this may lessen chances of having child tested. Cook et al corroborate this finding⁹. This may also be supported by findings in this study 'among fathers whose HIV status is known'. These fathers were shown to be more likely to take or allow their children to have HIV test done than fathers whose HIV status was not known.

Those formally employed though generally more knowledgeable than those informally employed, may not get time to take their children for HIV tests. The primary care giver who is informally employed was shown to be more likely to take child for HIV test than the formally employed. HIV test for one's baby is not a duty that one would readily send a maid to carry out in view of the sensitivity of test results. Mothers on ART were also shown to be more likely to take their children for HIV test than those who are not on ART. Mothers on ART go to health facilities to get their ARV supplies. During these visits they get adherence and counseling sessions and are reminded of the need to have their children tested for HIV.

HIV exposed children whose mothers are alive are more likely to be tested for HIV than those with no mothers. Primary care givers may be grandmothers who are less likely to take the children to health facilities. Generally they are old, less capable to fend for themselves hence unable to walk to health facilities or afford the fare.

Beliefs that ‘caring about child getting tested for HIV’, ‘knowing child’s HIV status would be helpful’, and ‘partner supportive that child should have an HIV test’ lead to increased HIV test uptake among infants and these findings were statistically significant in this study. Certainty on part of primary care givers that HIV tests for exposed infants can be done in the district could be done could also explain increased uptake among those who took their children for the test. This indicates that health systems and health care workers must understand beliefs of people they serve to best assist them. Conversely, beliefs that knowing child’s HIV status causes stress and that once child’s HIV status is known the child will be discriminated against could lower uptake of HIV tests among those not tested. This finding is consistent with a study done in 1999 by Bennetts et al. Varga et al also came up with similar findings in 2005⁸. Strategies have to be implemented to reach out to such care givers to health educate them and counsel them to increase HIV test uptake in this vulnerable age group.

5.2: Study Limitations

Selection bias was a limitation in this study as non response among cases was higher compared to controls. Cases are those children who did not get HIV test during the recommended period showing that health seeking behavior was poor compared to controls. Their willingness to participate in surveys on health will be lower compared to controls. Important information that was supposed to be collected and analyzed from non responders was lost.

Both cases and controls were hospital based. Babies not appearing on hospital registers were not included for sampling. The use of hospital based cases and controls reduces external validity (generalizability).

The sample size used in this study was not large enough to power the study. This may explain why some results were not statistically significant. Results will be more generalizable if a larger study is carried out. This may include cases and controls from the general population.

5.3: CONCLUSION

Knowledge levels among primary care givers of controls were better than among primary care givers of cases. Independent risk factors for infants not taking HIV test at six to eight weeks of age were the belief that once a child is tested the baby will be discriminated against and a mother who defaulted ART. The independent protective factor was certainty on the part of primary care giver that an HIV test could be done to infants in Goromonzi district.

5.4: RECOMMENDATIONS

1. Health education on when babies should be reviewed after discharge following delivery, when and where HIV tests should be to all HIV exposed infants should be strengthened in ANC

(District Nursing Officer)

2. There is need to address stigma and intensify health education in Goromonzi district that once a child is tested for HIV the baby will not be discriminated against **(Community Nurses, Nurses in charge of ANC and PMTCT programs)**

3. Adherence sessions and counseling to be intensified to curb defaulting ART by mothers. This will likely improve HIV uptake among infants **(Nurses in charge of ANC)**

4. Increasing awareness campaigns on when and where HIV exposed infants should go for HIV tests in Goromonzi district **(District Nursing Officer, Health Promotion Officer)**

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APPENDICES

Annex I: English Questionnaire^{21, 22, 23} for Primary Care Givers

Good morning/ afternoon. My name is Dr E. Gaka. I am a Public Health Officer attached at the National AIDS Council/ Makumbe Mission hospital. We are evaluating 'Factors Associated with Uptake of HIV Testing Among HIV Exposed Infants in Goromonzi District, 2012'. We would want to interview you. Please feel free to take part or refuse to answer any of the questions. The information you give will be treated as confidential. The results of this evaluation will be used in improving HIV test uptake among infants in the district, at provincial and national level. If you agree to take part, please sign below

Date of interview ___/___/___

Questionnaire No _____

1. CASE / CONTROL

Socio-demographic data

2. Where do you live? _____

3. How many people stay at the household you live? _____

4. How old are you? _____ (years)

5. What is your Sex? Female [] Male []

6. What is your marital status?

a. Married ()

b. Single ()

- c. Widowed ()
- d. Divorced ()
- e. Other, specify _____

7. What is your highest level of education?

- a. None ()
- b. Primary ()
- c. Secondary ()
- d. Tertiary ()

8. What is your religion?

- a. Nil
- b. Apostolic
- c. Pentecostal
- d. Traditional Christian churches
- e. Other, please specify _____

9. What is your professional background? _____

10. Are you formally employed? Yes / No

11. If yes, how much do you take home every month?

- a. Cannot tell you
- b. Less than \$100
- c. Between \$100 and \$200
- d. Between \$201 and \$400

e. Above \$400

12. Are you the biological mother/father of this child? Yes / No

13. If not, please state relationship with child

a. Maid for more than 1 year

b. Maid for less than a year

c. Sister to the mother

d. Sister to the father

e. Other, please state _____

14. Is child's mother alive?

a. Yes

b. No

c. Do not know

15. What was the maternal age at marriage? _____

16. What was the maternal age at first HIV test? _____

17. When was the mother diagnosed HIV positive? _____

18. If date not known;

a. Not applicable (HIV negative)

b. Do not know

c. HIV test not done

d. Other, please specify _____

19. Is / was the mother on ART

- a. Not applicable
- b. Do not know
- c. No
- d. Yes

20. If no, please explain why _____

21. If yes, has she ever defaulted treatment? Yes / No

22. Has she suffered any side effects as a result of ARVs? Yes / No

23. Did mother attend postnatal clinic at 6 weeks?

- a. Yes
- b. No
- c. Do not know

24. If not explain why _____

Did the mother/primary caregiver know the baby was supposed to take an HIV test at 6 weeks of age? Yes () No ()

25. If yes, was baby brought to facility as well?

- a. Yes
- b. No
- c. Do not know

26. Was baby tested during this visit?

- a. Yes
- b. No
- c. Do not know

27. If not, explain _____

28. Was baby's HIV status communicated to;

- a. Grandparents? Yes / No
- b. Friends? Yes / No
- c. Father? Yes / No

29. Did baby look healthy at birth? Yes / No

30. Did baby look healthy at six weeks of age? Yes / No

31. Is child's father alive?

- a. Yes
- b. No
- c. Do not know

32. What is the highest level of education of the child's father?

- a. None
- b. Primary
- c. Secondary
- d. Tertiary

- e. Do not know

33. What is/was his religion?

- a. Nil
- b. Apostolic
- c. Pentecostal
- d. Traditional Christian churches
- e. Do not know
- f. Other, please specify _____

34. Is your husband formally employed?

- a. Yes
- b. No
- c. Do not know
- d. Not applicable (eg dead)

35. If yes, how much does he take home every month?

- a. Do not know
- b. Less than \$100
- c. Between \$100 and \$200
- d. Between \$201 and \$400
- e. Above \$400

36. What is/was the father of this child's HIV status?

- a. Do not know

- b. Positive
- c. Negative
- d. Never took HIV test

37. If positive, is/was he on ART?

- a. Yes
- b. No
- c. Do not know

38. If not, please explain

39. How old is this child? (Completed months) _____

40. Is there a Road to Health card for this child? Yes / No

41. Is it up to date? Yes / No

42. Where was this child born?

- a. At home
- b. On way to hospital
- c. In hospital
- d. At traditional birth attendant's place
- e. At church
- f. Elsewhere, please state _____

43. If child was not delivered in hospital, can you explain why?

- a. No transport
- b. Delays in transport arrangement
- c. No cash for transport
- d. Religious reasons
- e. Preferred delivery at home
- f. Other, please explain _____

44. If child was tested for HIV, where was the test done?

- a. MCH
- b. PMTCT
- c. Elsewhere separate from mother
- d. Not tested
- e. Other, please specify _____

Beliefs of Primary Caregivers

45. How strongly do you believe that HIV test in infants leads to increased number of HIV positive infants commencing ART?

- a. I do not believe this at all
- b. I sometimes do not believe this
- c. I do not know
- d. I sometimes believe this
- e. I am completely sure of this

46. How much do you care about your child getting tested for HIV in infancy?

- a. Not at all
- b. Sometimes I do not care
- c. I am undecided
- d. Sometimes I care
- e. extremely

47. Do you think knowing this child's HIV test result causes you stress?

- a. Strongly disagree
- b. Disagree
- c. Undecided
- d. Agree
- e. Strongly agree

48. Do you think knowing this child's HIV test result is helpful?

- a. Strongly disagree
- b. Disagree
- c. Undecided
- d. Agree
- e. Strongly agree

49. Do you believe your husband/partner/the father of this child wanted this child to have HIV test during infancy?

- a. Strongly disagree
- b. Disagree

- c. Undecided
- d. Agree
- e. Strongly agree

50. Do you believe that once your child is HIV tested, the child will be discriminated against?

- a. Strongly disagree
- b. Disagree
- c. Undecided
- d. Agree
- e. Strongly agree

51. Do you have beliefs your in-laws wanted this child to have HIV test during infancy?

- a. Strongly disagree
- b. Disagree
- c. Undecided
- d. Agree
- e. Strongly agree

52. Do you have beliefs your blood relatives wanted this child to have HIV test during infancy?

- a. Strongly disagree
- b. Disagree
- c. Undecided
- d. Agree
- e. Strongly agree

53. How certain are you that an HIV test can be done to infants in this district given available resources?

- a. Strongly uncertain
- b. Certain
- c. Undecided
- d. Certain
- e. Strongly certain

Attitudes

54. Is it good that you know about HIV status of this child?

- a. Strongly disagree
- b. Disagree
- c. Undecided
- d. Agree
- e. Strongly agree

55. What will a heel prick to your child do during sample collection?

- a. Harmful _____: _____: _____: _____: _____ Beneficial
- b. Pleasant _____: _____: _____: _____: _____ Unpleasant
- c. Good _____: _____: _____: _____: _____ Bad
- d. Worthless _____: _____: _____: _____: _____ Valuable
- e. Enjoyable _____: _____: _____: _____: _____ Unenjoyable

Norms

56. Would your husband support that the child takes HIV test?

- a. Strongly uncertain
- b. Certain
- c. Undecided
- d. Certain
- e. Strongly certain

57. Would your in-laws support that the child takes HIV test?

- a. Strongly uncertain
- b. Certain
- c. Undecided
- d. Certain
- e. Strongly certain

58. Would your friends support that the child takes HIV test?

- a. Strongly uncertain
- b. Certain
- c. Undecided
- d. Certain
- e. Strongly certain

60. How do you generally assess society's expectation that your child must take HIV test if mother's is positive/unknown?

- a. Society expects I must have child tested for HIV

- b. Society expects I may have child tested for HIV
- c. I do not know
- d. Society expects I may not have child tested for HIV
- e. Society expects I must not have child tested for HIV

61. To what degree are you usually ready to fulfill expectations of your husband/partner?

- a. Not at all ready
- b. Generally not ready
- c. I do not know
- d. Generally ready
- e. Absolutely ready

62. To what degree are you usually ready to fulfill expectations of your friends?

- a. Not at all ready
- b. Generally not ready
- c. Undecided
- d. Generally ready
- e. Absolutely ready

63. To what degree are you usually ready to fulfill expectations of your in-laws?

- a. Not at all ready
- b. Generally not ready
- c. Undecided
- d. Generally ready

- e. Absolutely ready

64. What do most people who are important to you think about you taking child for HIV test when 6 to 8 weeks old?

- a. I must
- b. Maybe I should
- c. Do not know
- d. Maybe I should not
- e. I must never

65. Is it expected of you to take child for HIV test between 6 to 8 weeks of age?

- a. Definitely
- b. maybe
- c. Do not know
- d. Maybe not
- e. never

66. What would people in your life whose opinions you value do?

- a. Strongly approve
- b. May approve
- c. Do not know
- d. May not approve
- e. Definitely disapprove

67. Do most people who are important to you take their children for HIV test when they are 6 to 8 weeks old?

- a. Completely true
- b. Maybe yes
- c. Do not know
- d. Maybe not
- e. Completely false

Self efficacy

68. How certain are you that you want children to have HIV test during infancy?

- a. Strongly uncertain
- b. Certain
- c. Undecided
- d. Certain
- e. Strongly certain

69. How certain are you that you want this child to have HIV test?

- a. Strongly uncertain
- b. Certain
- c. Undecided
- d. Certain
- e. Strongly certain

70. How certain are you that you can overcome pressure from in-laws?

- a. Strongly uncertain
- b. Certain
- c. Undecided
- d. Certain
- e. Strongly certain

71. Are you likely to take your forthcoming child for HIV test during 6 to 8 weeks of age?

Possible _____: _____: _____: _____: _____ Impossible

Definitely true _____: _____: _____: _____: _____ Definitely false

72. How much control do you believe you have over your forthcoming child having an HIV test at 6 to 8 weeks of age?

No control _____: _____: _____: _____: _____ Complete control

73. Is it mostly up to you that every child you have will have an HIV test or not at 6 to 8 weeks of age?

Strongly agree _____: _____: _____: _____: _____ Strongly disagree

Intention

74. How likely are you to have a child in future?

- a. Strongly uncertain
- b. Certain
- c. Undecided
- d. Certain

- e. Strongly certain

75. If you are to have another baby in future, how likely are you to have this child tested for HIV?

- a. Strongly uncertain
- b. Certain
- c. Undecided
- d. Certain
- e. Strongly certain

76. Was your child before this one tested for HIV?

- a. Yes
- b. No
- c. Not applicable
- d. There was no need

Level of Knowledge among Primary Caregivers

77. When is baby's first assessment supposed to be after delivery?

- a. Soon after birth
- b. After 3 days
- c. After one week
- d. At six weeks of age

78. When is baby first expected at health facility for assessment after discharge from health facility after delivery?

- a. After 3 days
- b. After 7 days
- c. After 6 weeks
- d. When sick
- e. For immunizations only
- f. Other, please specify _____

79. When is baby expected to have HIV test?

- a. Soon after birth
- b. Any time before six weeks of age
- c. At six weeks
- d. After six weeks
- e. Any time the caregiver feels is convenient

80. Where can HIV test in infants be done?

- a. District hospital only
- b. Provincial hospital only
- c. At any health facility where DBS can be done
- d. Cannot be done anywhere in Zimbabwe before 18 months of age
- e. Other, please specify _____

81. Is HIV exposed baby supposed to be on cotrimoxazole prophylaxis? Yes / No

If yes, when?

- a. From birth
- b. From six weeks
- c. For life

82. Is HIV exposed baby supposed to be on ARV prophylaxis?

- a. Yes, from birth
- b. Yes, from six weeks
- c. No

83. Is HIV exposed baby supposed to breastfeed?

- a. Yes, exclusively for six months
- b. Yes, mixed feeding
- c. Not at all

Health Service related Factors

84. How far are you from the nearest public health facility (distance in km)? _____

85. How do you get to the nearest public health facility?

- a. Walk
- b. Call an ambulance
- c. Public transport
- d. Drive

86. If you pay, how much do you pay to get there? (USD) _____

87. How many days in a week is health facility open for EID? _____

88. For how long is the health facility open for PMTCT services? (number of hours/working day)

—

90. Where would you prefer to take your baby for HIV test?

- a. Nearest health facility
- b. Private health facility not necessarily nearest health facility
- c. Where no one knows me
- d. I do not want my child to have HIV test

91. If public health facility is nearest and you do not want to go there, please explain why

92. Is health staff friendly at the nearest health facility? Yes / No

93. Do you find health staff at nearest health facility helpful? Yes / No

94. Does health staff explain issues to clients in the language you understand? Yes / No

95. Does health staff explain issues to you in the language you understand? Yes / No

96. Did health staff interpret HIV status to you before discharge? Yes / No

97. Was baby assessed after delivery before discharge? Yes / No

98. Was health education given to you on;

- a. Hygiene? Yes / No
- b. Nutrition? Yes / No

- c. Danger signs? Yes / No
- d. Early infant diagnosis? Yes / No
- e. Dates for review/ assessments (day 3, 7, sixth week)? Yes / No

99. Does health staff attitude improve HIV testing among infants? Yes / No

If not, state reasons _____

100. Who runs the nearest public health facility?

- a. Ministry of Health
- b. Local authority (council)
- c. Mission
- d. Other, specify _____

101. Are you charged user fees? Yes / No

102. If yes, how much? (USD) _____

103. What is your general assessment of health worker attitude?

- a. Excellent
- b. Good
- c. average
- d. bad
- e. terrible

104. Do health workers at your health facility offer HIV test to all pregnant women? Yes / No

105. Do pregnant women get HIV test results the same day blood is drawn? Yes / No

106. Is HIV test for infants to be carried out at six weeks of infant age discussed? Yes / No

107. Do health workers at health facility offer HIV test to partners of pregnant women? Yes / No

108. Do health workers at nearest health facility offer HIV test to all infants at six weeks? Yes /
No

109. Do health workers at nearest health facility observe the 3 C's?

a. confidentiality? Yes / No

b. informed consent? Yes / No

c. counseling? Yes / No

110. Is there integration of chronic HIV care into postnatal care services? Yes / No

111. Are there couple counseling sessions at ANC clinic? Yes / No

112. Was your husband tested at ANC? Yes / No

113. If not, explain _____

114. Is there postnatal follow up of HIV exposed infants at your health facility? Yes / No

115. If HIV test was done, after how long did you get a result?

a. 2 weeks

b. 4 weeks

c. 2 months

d. 4 months

e. More than 4 months

116. Does having an HIV test lead to;

- a. break up of my family. Yes / No
- b. the prevention of HIV spread. Yes / No
- c. anxiety as a result of the long wait? Yes / No
- d. enables me to get better treatment? Yes / No
- e. Other, please specify _____

Annex II: Shona Questionnaire^{21, 22, 23} for Primary Care Givers

Mangwanani/Masikati! Zita rangu ndinonzi Chiremba Gaka. Parizvino ndiri mudzidzi wePublic Health ndichishandira kuNational AIDS Council uyezve paMakumbe Mission Hospital. Tiri kuita ongororo kuti tione kuti 'nde zvipi zvaiita kuti vana vanoberekwa nanamai vane chirwere che HIV/AIDS vaongororwe kuti vane chirwere cheHIV kana kuti kwete mudunhu reGoromonzi mugore ra2012'. Tiri kuda kukuvhunzai maererano nenyaya iyi. Sunungukai kubvuma kana kuramba kuvhunzwa nezvenyaya iyi. Umbowo hwamuchatipa tichachengetedza kuti vamwe vanhu vasaziva. Ongororo iyi ichabatsira vanoronga mafambisirwo ekubatsira vana vanoberekwa nanamai vane chirwere cheHIV/AIDS mudunhu rino zvichizosanganisira nyika yese yeZimbabwe. Kana muchibvumirana nezvekuti ndikuvhunzei maererano nezveongororo iyi, ndokumbirawo musaine pazasi

Date of interview ___/___/___

Questionnaire No _____

1. CASE / CONTROL

Socio-demographic data

2. Where do you live? (Munogara kupi?) _____

3. How many people stay at the household you live? (Munogara muri vangani?) _____

4. How old are you? (Mune makore mangani?) _____ (years)

5. What is your Sex? (Muri murume kana mukadzi?) Female [] Male []

6. What is your marital status? (Makaroorwa/Makaroora?)

- f. Married ()
- g. Single ()
- h. Widowed ()
- i. Divorced ()
- j. Other, specify _____

7. What is your highest level of education? (Makadzidza kugumira papi?)

- e. None ()
- f. Primary ()
- g. Secondary ()
- h. Tertiary ()

8. What is your religion? (Munopinda chichi ipi?)

- f. Nil
- g. Apostolic
- h. Pentecostal
- i. Traditional Christian churches
- j. Other, please specify _____

9. What is your professional background? (Makadzidzira basa rei?) _____

10. Are you formally employed? (Muri kushanda here parizvino?) Yes / No

11. If yes, how much do you take home every month? (Kana muri kushanda, muri kutambira marii pamwedzi?)

- f. Cannot tell you

- g. Less than \$100
- h. Between \$100 and \$200
- i. Between \$201 and \$400
- j. Above \$400

12. Are you the biological mother/father of this child? (Ndimi mubereki wemwana uyu chaiye?)

Yes / No

13. If not, please state relationship with child (Kana musiri, ukama hwenyu nemwana uyu hwakamira sei?)

- f. Maid for more than 1 year
- g. Maid for less than a year
- h. Sister to the mother
- i. Sister to the father
- j. Other, please state _____

14. Is child's mother alive? (Mai wemwana uyu vapenyu?)

- d. Yes
- e. No
- f. Do not know

15. What was the maternal age at marriage? (Mai vwmwana uyu vaiva nemakore mangani pavakaroorwa?) _____

16. What was the maternal age at first HIV test? (Mai vemwana vaiva nemakore mangani pavakaongororwa nezveutachiona hweHIV?) _____

17. When was the mother diagnosed HIV positive? (Mai vemwana vakabatwa chirwere cheHIV zvariini?) _____

18. If date not known; (Kana zuva risingazikanwi;)

- e. Not applicable (HIV negative)
- f. Do not know
- g. HIV test not done
- h. Other, please specify _____

19. Is / was the mother on ART? (Mai vemwana vai/varikumwa mushonga wechirwere chinokonzerwa neHIV?)

- e. Not applicable
- f. Do not know
- g. No
- h. Yes

20. If no, please explain why (Kana vasiri, tsanangurai) _____

21. If yes, has she ever defaulted treatment? (Kana vakambomwa mapiritsi echirwere cheHIV, vakambomira kana kumwa zvisiriizvo?) Yes / No

22. Has she suffered any side effects as a result of ARVs? (Vakambotadza kuwirirana nemushonga weHIV here?) Yes / No

23. Did mother attend postnatal clinic at 6 weeks? (Mai vemwana uyu vakauya kuzotariswa mushure mesvondo nhatu vasununguka?)

- d. Yes
- e. No
- f. Do not know

24. If not explain why (Kana vasina, titsanangurirei)

Did the mother/primary caregiver know the baby was supposed to take an HIV test at 6 weeks of age? (Mai kana anyatsichengetedza mwana uyu vaiziva here kuti mwana aifanirwa kuongororwa nemaererano nechirwere cheHIV?) Yes () No ()

25. If yes, was baby brought to facility as well? (Kana vaiziva, vakauya nemwana here?)

- d. Yes
- e. No
- f. Do not know

26. Was baby tested during this visit? (Mwana akatorwa ropa rekuongorora chirwere cheHIV?)

- d. Yes
- e. No
- f. Do not know

27. If not, explain (Kana asina, tsanangurai) _____

28. Was baby's HIV status communicated to; (Mamiriro emwana maererano nechirwere cheHIV akataurirwa kuna;)

- d. Grandparents? Yes / No

e. Friends? Yes / No

f. Father? Yes / No

29. Did baby look healthy at birth? (Mwana airatidzika zvakanaka paakazvarwa here?) Yes / No

30. Did baby look healthy at six weeks of age? (Mwana airatidzika zvakanaka here mushure mesvondo nhanhatu aberekwa?) Yes / No

31. Is child's father alive? (Baba vemwana uyu vapenyu here?)

d. Yes

e. No

f. Do not know

32. What is the highest level of education of the child's father? (Baba vemwana vakadzidza kusvika papi?)

f. None

g. Primary

h. Secondary

i. Tertiary

j. Do not know

33. What is/was his religion? (Baba vemwana vano/vaipinda chechi ipi?)

g. Nil

h. Apostolic

i. Pentecostal

j. Traditional Christian churches

k. Do not know

l. Other, please specify _____

34. Is your husband formally employed? (Murume wenyu anoshanda?)

e. Yes

f. No

g. Do not know

h. Not applicable (eg dead)

35. If yes, how much does he take home every month? (Kana vachishanda, vanotambira marii pamwedzi?)

f. Do not know

g. Less than \$100

h. Between \$100 and \$200

i. Between \$201 and \$400

j. Above \$400

36. What is/was the father of this child's HIV status? (Baba vemwana vakamira sei maererano nechirwere cheHIV?)

e. Do not know

f. Positive

g. Negative

h. Never took HIV test

37. If positive, is/was he on ART? (Kana vakabatwa chirwere cheHIV, vari kumwa mapiritsi echirwere ichi here?)

- d. Yes
- e. No
- f. Do not know

38. If not, please explain (Kana vasiri, tsanangurai)_____

39. How old is this child? (Completed months) (Mwana akura zvakadii? (Ipai mwedzi yaakakwanisa semhinduro)_____

40. Is there a Road to Health card for this child? (Mwana ane kadhi rekuBaby kiriniki?) Yes / No

41. Is it up to date? (Hapana paakadarikira kuuyiswa kukirinika?) Yes / No

42. Where was this child born? (Mwana akaberekerwa kupi?)

- g. At home
- h. On way to hospital
- i. In hospital
- j. At traditional birth attendant's place
- k. At church
- l. Elsewhere, please state _____

43. If child was not delivered in hospital, can you explain why? (Kana mwana asina kuberekerwa muchipatara/kirinika tsanangurai)

- g. No transport
- h. Delays in transport arrangement
- i. No cash for transport
- j. Religious reasons
- k. Preferred delivery at home
- l. Other, please explain _____

44. If child was tested for HIV, where was the test done? (Kana mwana akatorwa ropa kuongororwa utachiona hweHIV, zvakaitirwa kupi?)

- f. MCH
- g. PMTCT
- h. Elsewhere separate from mother
- i. Not tested
- j. Other, please specify _____

Beliefs of Primary Caregivers

45. How strongly do you believe that HIV test in infants leads to increased number of HIV positive infants commencing ART? (Munonyatsotendeseka here kuti Ongororo muvana vasati vasvitsa gore pakuzvarwa inobatsira kuti vakawanda vanobatwa chirwere cheHIV vamwe mishonga?)

- f. I do not believe this at all
- g. I sometimes do not believe this
- h. I do not know
- i. I sometimes believe this

j. I am completely sure of this

46. How much do you care about your child getting tested for HIV in infancy? (Munoshuvirawo here kuti mwana uyu awongorerwe kuti ane chirwere cheHIV here?)

f. Not at all

g. Sometimes I do not care

h. I am undecided

i. Sometimes I care

j. extremely

47. Do you think knowing this child's HIV test result causes you stress? (Munofunga kuti mukaziva kuti mwana uyu ane chirwere cheHIV zvinokonzera kushushikana zvikuru kwamuri?)

f. Strongly disagree

g. Disagree

h. Undecided

i. Agree

j. Strongly agree

48. Do you think knowing this child's HIV test result is helpful? (Munofunga kuti mukaziva kuti mwana uyu akamira sei pachirwere cheHIV zvinobatsira?)

f. Strongly disagree

g. Disagree

h. Undecided

i. Agree

j. Strongly agree

49. Do you believe your husband/partner/the father of this child wanted this child to have HIV test during infancy? (Munoona here sekuti baba vemwana uyu vaida kuti mwana awongorerwe kuti ane chirwere cheHIV?)

f. Strongly disagree

g. Disagree

h. Undecided

i. Agree

j. Strongly agree

50. Do you believe that once your child is HIV tested, the child will be discriminated against? (Munoona here sekuti mwana uyu akawongororwa kuti ane chirwere cheHIV anozosarudzwa munzira isina kunaka?)

f. Strongly disagree

g. Disagree

h. Undecided

i. Agree

j. Strongly agree

51. Do you have beliefs your in-laws wanted this child to have HIV test during infancy? (Munoona sekuti vamwene nehama dzavo vaida kuti mwana uyu awongororwe kuti ane chirwere cheHIV?)

f. Strongly disagree

- g. Disagree
- h. Undecided
- i. Agree
- j. Strongly agree

52. Do you have beliefs your blood relatives wanted this child to have HIV test during infancy?

(Munoona here sekuti hama dzenyu dzaida kuti mwana awongorerwe kuti ane chirwere cheHIV?)

- f. Strongly disagree
- g. Disagree
- h. Undecided
- i. Agree
- j. Strongly agree

53. How certain are you that an HIV test can be done to infants in this district given available

resources? (Mune chokwadi chakadzama sei pakuti vana vasati vasvitsa gore pakuzvarwa vanofanira kuwongororwa kuti vane chirwere cheHIV?)

- f. Strongly uncertain
- g. Certain
- h. Undecided
- i. Certain
- j. Strongly certain

Attitudes

54. Is it good that you know about HIV status of this child? (Zvakanaka here kuti imi muzive kuti mwana ane chirwere cheHIV kana kuti kwete?)

- f. Strongly disagree
- g. Disagree
- h. Undecided
- i. Agree
- j. Strongly agree

55. What will a heel prick to your child do during sample collection? (Kubaiwa pagumbo kwemwana pakutora ropa munokuona sei?)

- f. Harmful _____: _____: _____: _____: _____ Beneficial
- g. Pleasant _____: _____: _____: _____: _____ Unpleasant
- h. Good _____: _____: _____: _____: _____ Bad
- i. Worthless _____: _____: _____: _____: _____ Valuable
- j. Enjoyable _____: _____: _____: _____: _____ Unenjoyable

Norms

56. Would your husband support that the child takes HIV test? (Murume wenyu anotsigira here kuti mwana awongororwe kuti ane chirwere cheHIV kana kuti kwete?)

- f. Strongly uncertain
- g. Certain
- h. Undecided
- i. Certain

j. Strongly certain

57. Would your in-laws support that the child takes HIV test? (Hama dzekwawakaroorwa dzinotsigira here kuti mwana awonekwe kuti anechirwere cheHIV kana kuti kwete?)

f. Strongly uncertain

g. Certain

h. Undecided

i. Certain

j. Strongly certain

58. Would your friends support that the child takes HIV test? (Shamwari dzenyu dzinotsigira here kuti mwana awongororwe kuti ane chirwere cheHIV kana kuti kwete?)

f. Strongly uncertain

g. Certain

h. Undecided

i. Certain

j. Strongly certain

60. How do you generally assess society's expectation that your child must take HIV test if mother's is positive/unknown? (Vanhu vari munharaunda vanofungei nezvekuti vana vawongororwe kuti vane chirwere cheHIV kana kuti kwete?)

f. Society expects I must have child tested for HIV

g. Society expects I may have child tested for HIV

h. I do not know

- i. Society expects I may not have child tested for HIV
- j. Society expects I must not have child tested for HIV

61. To what degree are you usually ready to fulfill expectations of your husband/partner?

(Makagadzirira here kuzadzikisa zvinotarisirwa nemurume wenyu?)

- f. Not at all ready
- g. Generally not ready
- h. I do not know
- i. Generally ready
- j. Absolutely ready

62. To what degree are you usually ready to fulfill expectations of your friends? (makagadzirira here kuzadzikisa zvinotarisirwa neshamwari dzenyu?)

- f. Not at all ready
- g. Generally not ready
- h. Undecided
- i. Generally ready
- j. Absolutely ready

63. To what degree are you usually ready to fulfill expectations of your in-laws? (Makagadzirira here kuzadzikisa zvinotarisirwa nehama dzemurume wenyu?)

- f. Not at all ready
- g. Generally not ready
- h. Undecided

- i. Generally ready
- j. Absolutely ready

64. What do most people who are important to you think about you taking child for HIV test when 6 to 8 weeks old? (Vanhu vakakosha kwamuri vanofungei nezvewongororo muvana kuti vane chirwere cheHIV vane svondo tanhatu kusvika svondo sere dzekuberekwa?)

- f. I must
- g. Maybe I should
- h. Do not know
- i. Maybe I should not
- j. I must never

65. Is it expected of you to take child for HIV test between 6 to 8 weeks of age? (Munotarisirwa here imimi kutora mwana kuti awongorerwe kuti ane chirwere cheHIV?)

- f. Definitely
- g. maybe
- h. Do not know
- i. Maybe not
- j. never

66. What would people in your life whose opinions you value do? (Vanhu vakakosha muupenyu hwenyu munovatarisira kuti vangaita sei?)

- f. Strongly approve
- g. May approve

- h. Do not know
- i. May not approve
- j. Definitely disapprove

67. Do most people who are important to you take their children for HIV test when they are 6 to 8 weeks old? (Vanhu vakakosha muupenyu hwenyu vanoendesa vana vavo here kunoongororwa kuti vane chirwere cheHIV kana kuti kwete?)

- f. Completely true
- g. Maybe yes
- h. Do not know
- i. Maybe not
- j. Completely false

Self efficacy

68. How certain are you that you want children to have HIV test during infancy? (Munehokwadi chakanyanya here kuti munoda kuti vana vaongororwe kuti vane chirwere cheHIV?)

- f. Strongly uncertain
- g. Certain
- h. Undecided
- i. Certain
- j. Strongly certain

69. How certain are you that you want this child to have HIV test? (Munochokwadi chakanyanya here kuti munoda kuti mwana uyu awongororwe kuti ane chirwere cheHIV?)

- f. Strongly uncertain
- g. Certain
- h. Undecided
- i. Certain
- j. Strongly certain

70. How certain are you that you can overcome pressure from in-laws? (Munochokwadi here kuti munogona kumbopikisana nezvinodiwa nehama dzumurume wenyu?)

- f. Strongly uncertain
- g. Certain
- h. Undecided
- i. Certain
- j. Strongly certain

71. Are you likely to take your forthcoming child for HIV test during 6 to 8 weeks of age? (Mukana wenyu wekuendeswa mwana wenyu achatevera pakuberekwa wakawanda zvakadii?)

Possible _____: _____: _____: _____: _____ Impossible

Definitely true _____: _____: _____: _____: _____ Definitely false

72. How much control do you believe you have over your forthcoming child having an HIV test at 6 to 8 weeks of age? (Mune masimba akawanda zvakadii pakuti mwana wenyu achatevera pakuberekwa awongororwe kuti ane chirwere cheHIV?)

No control _____: _____: _____: _____: _____ Complete control

73. Is it mostly up to you that every child you have will have an HIV test or not at 6 to 8 weeks of age? (Zviri kwamuri here kuti mwana wenyu achatevera awongororwe kuti ane chirwere cheHIV?)

Strongly agree _____: _____: _____: _____: _____ Strongly disagree

Intention

74. How likely are you to have a child in future? (Mukana yenyu yekuzoita mumwe mwana yakawanda zvakadii?)

- f. Strongly uncertain
- g. Certain
- h. Undecided
- i. Certain
- j. Strongly certain

75. If you are to have another baby in future, how likely are you to have this child tested for HIV? (Kana mukazoita umwe mwana, mukana wenyu kuti awongororwe kuti ane chirwere cheHIV yakawanda zvakadii?)

- f. Strongly uncertain
- g. Certain
- h. Undecided
- i. Certain
- j. Strongly certain

76. Was your child before this one tested for HIV? (Mwana wamakaita anoteverwa neuno akawongororwa kuti ane chirwere cheHIV here?)

- e. Yes
- f. No
- g. Not applicable
- h. There was no need

Level of Knowledge among Primary Caregivers

77. When is baby's first assessment supposed to be after delivery? (Mwana anotarisirwa nevarapi kwapera nguva yakadii aberekwa?)

- e. Soon after birth
- f. After 3 days
- g. After one week
- h. At six weeks of age

78. When is baby first expected at health facility for assessment after discharge from health facility after delivery? (Mwana anotarisirwa kudzoka kuchipatara riini mushure mokunge abuba achangobva kuberekwa?)

- g. After 3 days
- h. After 7 days
- i. After 6 weeks
- j. When sick

- k. For immunizations only
- l. Other, please specify _____

79. When is baby expected to have HIV test? (Mwana anotarisirwa kuongororwa kuti ane chirwere cheHIV akura sei mushure mekuberekwa?)

- f. Soon after birth
- g. Any time before six weeks of age
- h. At six weeks
- i. After six weeks
- j. Any time the caregiver feels is convenient

80. Where can HIV test in infants be done? (Vana vachangoberekwa vanotorwa ropa kupi kuti riongororwe kana vane chirwere cheHIV?)

- f. District hospital only
- g. Provincial hospital only
- h. At any health facility where DBS can be done
- i. Cannot be done anywhere in Zimbabwe before 18 months of age
- j. Other, please specify _____

81. Is HIV exposed baby supposed to be on cotrimoxazole prophylaxis? Yes / No

If yes, when? (Vana vanoberekwa nanamai vane chirwere cheHIV vanotarisirwa kumwa Cotrimoxazole?). Kana mhinduro iri hongu, vanotarisirwa kumwa Cotrimoxazole vakura zvakadii?)

- d. From birth

- e. From six weeks
- f. For life

82. Is HIV exposed baby supposed to be on ARV prophylaxis? (Mwana anoberekwa naamai vane chirwere cheHIV vanotarisirwa kumwa mishonga yekuzvidzivirira kubata chirwere cheHIV?)

- d. Yes, from birth
- e. Yes, from six weeks
- f. No

83. Is HIV exposed baby supposed to breastfeed? (Mwana anoberekwa naamai vane chirwere cheHIV vanofanira kuyamwa?)

- d. Yes, exclusively for six months
- e. Yes, mixed feeding
- f. Not at all

Health Service related Factors

84. How far are you from the nearest public health facility (distance in km)? (Muri kure zvakadii nekirinika/chipatara chiri pedo nemi?)_____

85. How do you get to the nearest public health facility? (Munofamba sei kusvika pachipatara/kirinika iri pedo nemi?)

- e. Walk
- f. Call an ambulance
- g. Public transport

h. Drive

86. If you pay, how much do you pay to get there? (USD) (Kana muchibhadhara mari, munobhadhara marii?)_____

87. How many days in a week is health facility open for EID? (Kirinika inovhurwa mazuva mangani pasvondo kuti vana vaongororwe kuti vane chirwere cheHIV?) _____

88. For how long is the health facility open for PMTCT services? (number of hours/working day) _____ (kirinika inovhugwa kwenguva yakadii maererano nechirongwa chePMTCT?)

90. Where would you prefer to take your baby for HIV test? (Munoshuvira kuendeswa mwana wenyu kupi kuti aongororwe kana aine chirwere cheHIV kana kuti kwete?)

e. Nearest health facility

f. Private health facility not necessarily nearest health facility

g. Where no one knows me

h. I do not want my child to have HIV test

91. If public health facility is nearest and you do not want to go there, please explain why (Kana chipatara/kirinika yehurumende iriyo iri pedo imi musingaendese mwana ipapo, tisanangurirei?)

92. Is health staff friendly at the nearest health facility? Yes / No (Vashandi vanorapa vanofarira basa ravo here?)

93. Do you find health staff at nearest health facility helpful? Yes / No (Vashandi vanorapa vanobatsira varwere here?)

94. Does health staff explain issues to clients in the language you understand? Yes / No
(Vanorapa vanonyatsotsanangurira varwere nemutauro wavanonzwisisa?)

95. Does health staff explain issues to you in the language you understand? Yes / No (Vanorapa vanonyatso kutsanangurirai nemutauro wamunonzwisisa here?)

96. Did health staff interpret HIV status to you before discharge? Yes / No (Vanorapa vakakutaurirai kuti chirwere cheHIV chakabatwa here kana kuti kwete?)

97. Was baby assessed after delivery before discharge? Yes / No (Mwana paakaberekwa akaongororwa here musati mabuda muchipatara?)

98. Was health education given to you on; (Makawana dzidziso here pane;)

f. Hygiene? Yes / No

g. Nutrition? Yes / No

h. Danger signs? Yes / No

i. Early infant diagnosis? Yes / No

j. Dates for review/ assessments (day 3, 7, sixth week)? Yes / No

99. Does health staff attitude improve HIV testing among infants? Yes / No (Vanorapa vanobatsira here kuti vana vaongororwe kana vane chirwere cheHIV?)

If not, state reasons _____

100. Who runs the nearest public health facility? (Kirinika/Chipatara chiri pedo nemwi ndechani?)

e. Ministry of Health

- f. Local authority (council)
- g. Mission
- h. Other, specify _____

101. Are you charged user fees? Yes / No (Munobhadhara here pakurapiwa?)

102. If yes, how much? (USD) _____ (Kana muchibhadhara, munobhadhara marii?)

103. What is your general assessment of health worker attitude? (Munoonawo sei mashandiro evanokurapai?)

- f. Excellent
- g. Good
- h. average
- i. bad
- j. terrible

104. Do health workers at your health facility offer HIV test to all pregnant women? Yes / No (Vanokurapai vanokurudzira here kuti mudzimai wese akazvitakura aongororwe kana ane chirwere cheHIV?)

105. Do pregnant women get HIV test results the same day blood is drawn? Yes / No (Madzimai akazvitakura anokwanisa kuziva kana vaine chirwere cheHIV musi wavatorwa ropa?)

106. Is HIV test for exposed infants to be carried out at six weeks of infant age discussed? Yes / No (Munombotaurirwa kuti vana vana vanoberekwa nanamai vane chirwere cheHIV vanofanira kuongororwa kana vaine chirwere cheHIV?)

107. Do health workers at health facility offer HIV test to partners of pregnant women? Yes / No
(Vanorapa vanotaurira varume vevakadzi vakazvitakura kuti vanofanirawo kutorwa ropa kuti
zvionekwe kana vaine chirwere cheHIV?)

108. Do health workers at nearest health facility offer HIV test to all infants at six weeks? Yes /
No (Vanorapa pakirinika yepedo nemwi vanokurudzira here kuti vana vose vaonekwe kana vaine
chirwere cheHIV?)

109. Do health workers at nearest health facility observe the 3 C's? (Vanorapa pakirinika yepedo
nemwi vanokurudzira here zvema'C' matatu?)

d. confidentiality? Yes / No

e. informed consent? Yes / No

f. counseling? Yes / No

110. Is there integration of chronic HIV care into postnatal care services? (Pane kubatanidzwa
here pachirwere cheHIV/AIDS nekuonekwa kwavasununguka?) Yes / No

111. Are there couple counseling sessions at ANC clinic? (Vakaroorana vane
pavanomboyambirwa here neveutano?) Yes / No

112. Was your husband tested at ANC? (Murume wenyu akaongororwa here kuti ane chirwere
cheHIV kunowonekwa vakadzi vakazvitakura?) Yes / No

113. If not, explain (Kana asina, tsanangurai)

114. Is there postnatal follow up of HIV exposed infants at your health facility? (Vana vanoberekwa nanamai vane chirwere cheHIV vanombotevererwa here mushure mesvondo nhanhatu?) Yes / No

115. If HIV test was done, after how long did you get a result? (Kana mwana akaongororwa kuti ane chirwere cheHIV zvakatora nguva yakadii kuti muwane maresults?)

- f. 2 weeks
- g. 4 weeks
- h. 2 months
- i. 4 months
- j. More than 4 months

116. Does having an HIV test will lead to; (Kuongororwa kuti pane chirwere cheHIV kunokonzere;)

- f. break up of my family. Yes / No
- g. the prevention of HIV spread. Yes / No
- h. anxiety as a result of the long wait? Yes / No
- i. enables me to get better treatment? Yes / No
- j. Other, please specify _____

Annex 111: Questionnaire for Health Staff

Good morning/ afternoon. My name is Dr E. Gaka. I am a Public Health Officer attached at the National AIDS Council/ Makumbe Mission hospital. We are evaluating ‘Factors Associated with Uptake of HIV Testing Among HIV Exposed Infants in Goromonzi District, 2012’. We would want to interview you. Please feel free to take part or refuse to answer any of the questions. The information you give will be treated as confidential. The results of this evaluation will be used in improving HIV test uptake among infants in the district, at provincial and national level. If you agree to take part, please sign below

Date of interview___/___/___

Questionnaire No_____

Socio-demographic data

1. How old are you? _____ (years)
2. What is your Sex? Female [] Male []
3. What is your professional background? _____
4. For how long have you been at post? _____

Health Service Related Factors

5. Do you have the necessary reagents for DBS all the time? Yes () No ()

If not, please comment _____

6. How often do you take blood samples for DBS in a week?

- a. Once a week

- b. Sometimes zero times a week
- c. Twice weekly
- d. Three times per week
- e. At least four times a week

7. Is there transport for DBS specimens? Yes () No ()

If yes, how often do you get transport in a month?

- a. Nil sometimes
- b. Once
- c. Twice
- d. thrice
- e. At least four times

8. Do you advise mothers to bring infants for DBS? Yes () No ()

If yes, at what age should they come for DBS?

- a. Day 3
- b. Day 7
- c. Six weeks
- d. Eight weeks
- e. When convenient to them

9. Do mothers/fathers indicate unwillingness to bring infants for DBS? Yes () No ()

If yes, what are their reason(s)?

10. Are the mothers/fathers easy to assist? Yes () No ()

11. How often do you give health education to mothers before discharge?

- a. Sometimes never
- b. Once
- c. Twice
- d. At least thrice

12. Do you charge user fees for any service related to HTC, PMTCT and ART? Yes () No ()

13. What do you think are barriers to uptake of Early Infant Diagnosis in Goromonzi district?

14. Have you integrated EID into other programs at this facility? Yes () No ()

If not, please explain

Annex 1V: ENGLISH CONSENT FORM (Adapted from the MRCZ Consent Form)



Introduction

Topic: Factors Associated with Uptake of HIV Testing Among HIV Exposed Infants in Goromonzi District, 2012

Principal investigator: Evidence Gaka [MBChB (UZ)]

Phone number: 0712617853 or 04 790575

What you should know about this research study:

- We give you this consent so that you may read about the purpose, risks, and benefits of this research study.
- The main goal of this research is to gain knowledge that may help you and children born to HIV positive mothers.
- We cannot promise that this research will benefit you directly.

- You have the right to refuse to take part, or agree to take part now and change your mind later.
- Whatever you decide, it will not affect your health care and assistance you get at health facilities.
- Please review this consent form carefully. Ask any questions before you make a decision.
- Your participation is voluntary.

Purpose

You are being asked to participate in a study on ‘Factors Associated with Uptake of HIV Testing Among HIV Exposed Infants in Goromonzi District, 2012’. The purpose of the study is to determine factors associated with poor uptake of HIV test among infants in Goromonzi district in 2012. You were selected as a possible participant in this study because your name corresponded to a number that was picked from the HIV Exposed Infant Follow – up register at random. You are one of 278 participants to be interviewed for this study.

Procedures and Duration

If you decide to participate, you will undergo an interview where you will be asked questions about your Age, Sex, Level of Education, Occupation, Level of income and whether you are taking antiretroviral therapy or not.

If you decide to participate, you will be interviewed using an interviewer administered questionnaire. It will take about 15 minutes.

Setting

Interviews will be conducted in a given room at the health facility nearest to your home or at your house.

Risks and Discomforts

Your participation in this research will increase the time you are going to be at the health facility or at your house. Recollection of your HIV status can cause distress.

Benefits and/or Compensation

We do not promise that you will receive monetary or material benefits from this study. If you have suffered stress and discrimination and are in need of assistance, we will offer you appropriate treatment.

Confidentiality

If you indicate your willingness to participate in this study by signing this document, we will not include your name on the questionnaire. We plan to disclose any information obtained from this study to Mashonaland East Provincial Health Executive, Goromonzi district health team, National AIDS Council executives and the Academic panel of the University of Zimbabwe for the purpose of evidence based planning of programs and improving service delivery to our clients. Any information obtained in connection with this study that can be identified with you will remain confidential and will be disclosed only with your permission.

Additional Costs

There will be no additional costs to you.

Voluntary Participation

Participation in this study is voluntary. If you decide not to participate in this study, your decision will not affect your future relations with any health facilities and its personnel. If you decide to participate, you are free to withdraw your consent and to discontinue participation at any time without penalty.

Annex V: TSAMBA YECHITENDERANO (Adapted from the MRCZ Consent Form)



Kutanga

Tsvagurudzo yekuda kuziva kuti ‘ndezvipi zvaiita kuti vana vanoberekwa nanamai vane chirwere che HIV/AIDS vaongororwe kuti vane chirwere cheHIV kana kuti kwete mudunhu reGoromonzi mugore ra2012’.

Muongorori: Evidence Gaka [MBChB (UZ)]

Nhamba dzenhare: 0712617853 kana kuti 04 790575

Zvemunofanira kuziva maererano neongororo ino:

- Tirikukupai tsamba yechitenderano chino kuti mugonzwisisa zvinangwa zveongororo ino, zvakaipa uye zvakanakira ongororo ino.
- Chinangwa cheongororo ino ndechekutsvaga ruzivo nezvaiita kuti vana vanoberekwa nanamai vane chirwere che HIV/AIDS vaongororwe kana kusaongororwa kuti vane chirwere cheHIV.

- Hatikuvimbisei kuti pane zvamuchawana kuburikidza nekupinda muongororo ino.
- Makasununguka kuramba kupinda muongororo ino kana kubvuma kupinda iyezvino asi mozoramba panguva inotevera.
- Kubvuma kana kuramba kupinda muongororo ino, hazvikanganise kubatsirwa kwenyu panguva inotevera.
- Nyatsoverengai nekunzwisisa gwaro rino zvakakwana. Kana paine mibvunzo, sunungukai kubvunza musati masarudza kupinda kana kusapinda muongororo ino.
- Kupinda kwenyu muongororo ino hakumanikidzwe.

Chinangwa

Muri kukumbirwa kuti mupinde mutsvagurudzo yekuda kuziva kuti vana vanoberekwa nanamai vane chirwere che HIV/AIDS vaongororwe kuti vane chirwere cheHIV kana kuti kwete mudunhu reGoromonzi mugore ra2012'. Masarudzwa nekuda kwekuti zita renyu raenderana nenhamba yangodomwa mu register re vana vakaberekwa namai vane chirwere cheHIV/AIDS kwete kuti pane zvamaita kanazvamunazvo. Tinotarisa kukurukura nevanhu mazana maviri ane makumi manomwe nesere (278) mutsvagiridzo ino.

Maitirwo nenguva yeongororo

Kana matenda kupinda muongororo iyi muchatarisirwa kupindura mibvunzo pamusoro pemakore enyu ekuzvarwa, kuti makadzidza kusvika papi, mari yamunowana pa mwedzi uye nenyaya dzezvaiita kuti vana vanoberekwa nanamai vane chirwere che HIV/AIDS vaongororwe kana kusaongororwa kuti vane chirwere cheHIV. Mukabvuma kupinda muongororo ino muchange muchibvunzwa mibvunzo inogona kutora maminiti gumi nemashanu

Njodzi nekushungurudzika

Kupinda kwenyu muongororo kuchawedzera nguva yamuchange muri pano. Kubvunzwa kwenyu nyaya dzine chekuita nedambudziko rechirwere cheHIV/AIDS kunogona kukonzera kurwadziwa kana kushungurudzika mupfungwa.

Zvakanakira kuva muongororo

Hapana muripo wemari kana zvinhu zvamuchawana kuburikidza nekuva muongororo ino. Asi kuti kana mwana asati aongororwa kuti ane chirwere cheHIV/AIDS kana kuti kwete uye kuti kana aine chirwere arapiwe abatsirikane.

Kuvimbika kweongororo

Kana mukasarudza kupinda muongororo ino kuburikidza nokuisa runyoro rwenyu, zita renyu harisi kuzoiswa pagwaro rinenge rine mhinduro dzenyu. Zvatinenge tawana mutsvagurudzo ino tinotarisa kuzivisa veGoromonzi district hospital, National AIDS Council uye nevadzidzisi vedu vepaYunivhesiti yeZimbabwe nechinangwa chekuda kuwedzera mabatsiro atingaita vana vanenge vazvarwa nanamai vane chirwere cheHIV/AIDS. Zvichawanikwa muongoro ino zvinogona kunangana nemi zvinochengetedzwa muchiwande zvinogona kuzoburitswa chete kana imi muchinge mazvitendera.

Mumwe muripo

Hamuna chamunobhandara muongororo ino.

Kusununguka kupinda muongororo

Isarudzo yenyu kupinda muongororo ino. Kusarudza kusapinda muongororo ino hakukanganisi hukama hwenyu nevashandi veGoromonzi district kana kuti vekuNAC. Mukasarudza kupinda muongororo ino parizvino, makasununguka kusarudza kubuda muongororo panguva inotevera pasina muripo.

Kupindurwa kwemibvunzo

Musati maisa runyoro rwenyu pabepa rino, makasunungoka kubvunza mibvunzo pamunenge musina kunzwisisa. Makasununguka kutora nguva yamunoda kana muchida kumbonotanga mafunga nezvazvo.

Mvumo

Muri kuita sarudzo yekupinda kana kusapinda muongororo ino. Runyoro rwenyu runoratidza kuti maverenga uye manzwisisa umbowo hwamapihwa, majekeserwa pamaive musina kunzwisisa uye masarudza kupinda muongororo ino.

Zita remupinduri (nyorai zvinooneka)

Zuva

Runyoro rwechibvumirano rwemupinduri Nguva

Muchapihwa imwe tsamba yechitenderano kuti muzvichengetere

Kana mune mibvunzo isina kupindurwa nemuongorori zvichisanganisira mibvunzo pamusoro peongororo ino, kodzero dzenyu semupinduri kana mibvunzo yakanangana nekubatwa kwamaitwa muongororo ino, kana kusabatwa zvakanaka kwamunenge maitwa makasununguka

kubata veMedical Research Council of Zimbabwe panhamba dzerunhare dzinoti: 04-791792
kana 04-791193.

***Annex VI: Checklists**

Number of sites collecting DBS in Goromonzi district _____

Number of DBS samples collected _____

% positivity rate for DBS samples collected _____

Availability of test kits _____

***Checklist for Uptake of Early Infant Diagnosis**

Number of infants exposed to HIV _____

Proportion of HIV exposed infants lost to follow up at 6 weeks of age _____

Proportion of HIV exposed infants taking HIV test by 8 weeks of age _____

Proportion of HIV exposed infants coming for HIV test results _____

Proportion of HIV exposed infants testing HIV positive _____

Proportion of HIV positive infants commencing ART _____

Proportion of infants on ART defaulting ART (treatment) _____

*This data was extracted from registers kept at the DMO's office Goromonzi where I was attached for field work. This formed the basis of the statement of the problem