

**MISSED OPPORTUNITIES FOR IMPLEMENTATION OF NATIONAL GUIDELINES  
ON HIV RETESTING IN LABOUR/DELIVERY AND POSTPARTUM AT PUMWANI  
MATERNITY HOSPITAL**

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**A Thesis submitted in partial fulfillment for the degree of Masters of Medicine (Paediatrics  
and Child Health), University of Nairobi.**

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## DECLARATION

This thesis is my original work and has not been presented for the award of a degree in any other university



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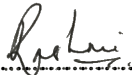
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## **ABBREVIATIONS:**

|        |   |
|--------|---|
| ANC    | Antenatal Care                              |
| ART    | Antiretroviral Therapy                      |
| CCC    | Comprehensive Care Clinic                   |
| eMTCT  | Elimination of Mother to Child Transmission |
| FGD    | Focus Group Discussion                      |
| HIV    | Human Immunodeficiency Virus                |
| HCW    | Health Care Worker                          |
| HTS    | HIV Testing Services                        |
| KAIS   | Kenya Aids Indicator Survey                 |
| KAP    | Knowledge Attitude and Practices            |
| KARPR  | Kenya Aids Response Progress Report         |
| KDHS   | Kenya Demographic Health Survey             |
| KNH    | Kenyatta National Hospital                  |
| PLWHIV | People Living with HIV                      |
| MCH    | Maternal and Child Health                   |
| MOH    | Ministry of Health                          |
| NACC   | National AIDS Control Council               |
| NASCOP | National AIDs and STI Control Programme     |
| NGOs   | Non-Governmental Organization               |
| PI     | Principal Investigator                      |
| PMH    | Pumwani Maternity Hospital                  |
| PMTCT  | Prevention of Mother to Child Transmission  |
| WHO    | World Health Organization                   |



## **DEFINITION OF TERMS**

**Knowledge:** In regards to the current topic, knowledge is defined as, facts, information, and skills acquired by health care workers (HCWs) through experience or education e.g. National guidelines on HIV retesting in labour/delivery and postpartum.

**Attitude:** In this context, attitude is a set of beliefs or views held by HCWs concerning National guidelines on HIV retesting in labour/delivery and postpartum.

**Practices:** Implementation of the current national guidelines on HIV retesting in labour/delivery and postpartum by HCWs.

**Missed opportunity:** Defined as the proportion of women who were not tested (did not know their current HIV status) after labour/delivery and after 6 weeks maternal and child health clinic (MCH) attendance.

**HIV testing services (HTS):**the full range of services that should be provided together with HIV testing – counselling (pre-test information and post-test counselling); linkage to appropriate HIV prevention, treatment and care services and other clinical and support services; and coordination with laboratory services to support quality assurance and the delivery of correct results. This study focused on retesting.

## ABSTRACT

**Introduction:** Vertical transmission of HIV is still a major challenge in developing countries. Mother-to child- transmission (MTCT) makes up for 90% of HIV infections/disease in children(1). WHO and NASCOP/MOH Guidelines recommend HIV testing to be done at various time points (2). These guidelines are important because of the high rates of seroconversion at 6.8% noted during pregnancy which continues to pose a threat regardless of the progress of efficacious PMTCT regimes (3).

**Objective:** This study aimed to determine proportion of cases of missed opportunities for HIV retesting guideline implementation in labour/delivery and post-partum and to evaluate Knowledge and attitudes among health care workers at Pumwani maternity hospital (PMH) of those guidelines.

**Methodology:** This involved a mixed methods survey. Women with an initial HIV negative result in ANC were sampled at labour/postnatal ward and at six weeks postnatal review. They were interviewed on social demographic characteristics and whether they accessed a repeat HIV test. Purposive sampling was employed to identify HCWs. Quantitative data was analyzed using SPSS version 25.0. Rates of HIV retest uptake were computed as proportions. Descriptive statistics was utilized for the study population. Audio recordings were transcribed. The emergent themes were identified, noted and presented in tabular form using thematic analysis approach.

**Results:** There were 242 women who participated in the interview.97 of whom were followed up at 6 weeks via a telephone interview. There were 170 women interviewed at labor ward. The retesting rate was 116(69.5%). Majority of the women 114(67.5%) lacked awareness of need for HIV retesting. Of the 97 women followed up at 6 weeks postpartum, 72(75%) were retested for HIV.

Of the 15 HCWs who were interviewed, 14 (93.3%) had received HTS training. One theme arrived at was varied knowledge on repeat testing guidelines for HIV and the team relied on mentor mothers and PMTCT nurses for guideline implementation.

**Conclusion:** According to our study, the HIV retesting rate at labour was fair at 69.5%, while the retesting rate at 6 weeks was slightly higher at 71.8%.

**Recommendations:** HIV screening in labour rooms needs to be routinely implemented to reduce missed opportunities for interventions aimed at HIV prevention. There is need to hold health care workers training and continuous education on HIV Testing Services.

## CHAPTER ONE: INTRODUCTION

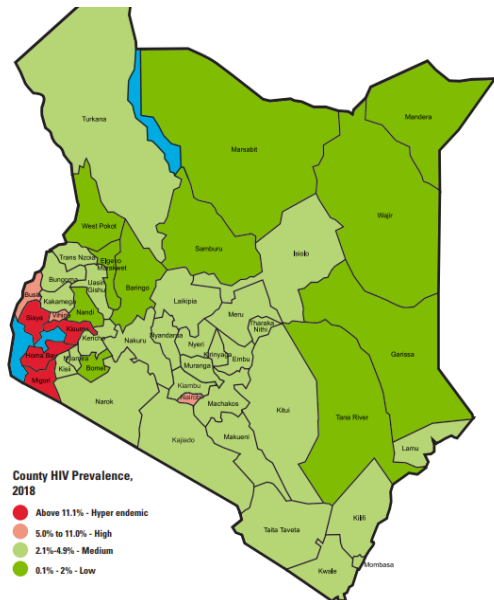
### 1.1 Introduction and epidemiology

HIV is one of the most serious public health challenges globally. There is global commitment to stop new HIV infections and ensure all persons living with HIV get care. The HIV epidemic in Kenya is driven by sexual transmission and affects all sections of the population including, young people, adults, men and women and children. HIV testing services (HTS) are a gateway to HIV prevention, care and treatment. It is critical to interrupt HIV spread to the unborn/newborn child as this facilitates prompt entry into the eMTCT programme. Implementation of effective HTS is only attainable with team effort by health care workers with skills as well as correct attitudes.

Kenya, according to National Aids Control Council has 1.5M people living with HIV, 57% being women (4). The national HIV prevalence is at 4.9%, tallied at 2.61% among females and 1.34% among males of ages 15-24 years. Regionally within Kenya the top six counties include Siaya at 21%, Homabay at 20.7%, Kisumu at 16.3%, Migori at 13.3%, Busia at 7.7%, and Nairobi at 6.1% as shown in figure 1.

In 2017, out of the calculated total new infections (52,800), the highest contribution was from Nairobi contributed at 7,159, Homa Bay was second at 4,558. Kisumu followed at 4,012, while Siaya had 4,039 and Migori had 2,814. Combined, the above mentioned counties made for about 43% of the approximated total new infections. Female youth in the age group 15-24 years attributed to 30% of all incident (new) HIV adult infections. Proposed actions like maternal HIV retesting will be important in averting heterosexual transmission as other prevention interventions are rolled out.

As stated in the 2014 Kenya Demographic Health Survey (KDHS), 71% of men and 83% of women aged 15-49 years have ever been tested for HIV and an estimated 57% of gravid women got tested for HIV (KARPR 2018)(5). This was much lower compared to 2015 where the national antenatal testing for HIV was at 72%. This could be attributed to the long-standing health workers strike in 2017.



**Figure 1: Kenya HIV prevalence by county**

There have been previous local studies evaluating implementation of HIV testing during pregnancy and they indicated that health system and social-demographic related factors influence HIV testing during pregnancy. Barriers to offering repeat HIV testing for health care workers includes heavy workloads, inadequate room space, and lack of training on new guidelines. Therefore knowledge and attitudes towards retesting is likely to affect uptake of these guidelines.

## CHAPTER TWO: LITERATURE REVIEW

### 2.1 HIV incidence in pregnancy and postpartum

Keeping HIV seronegative women without the infection is an important component of efforts to eliminate paediatric HIV infections. Evidence is available as highlighted below to show incidence of HIV being high during pregnancy and during the immediate postnatal duration. Repeat HIV testing during late pregnancy or at delivery provides an opportunity to identify those women that seroconvert during pregnancy and therefore identify seropositive HIV pregnant women who ought to gain from PMTCT interventions.

In a retrospective study done by Kinuthia et al, among women who were HIV seronegative during pregnancy in Kenya, out of 2,135 mothers who tested HIV negative during the antenatal period, 2,035 (95.3%) consented to receive an HIV re-test at six weeks postpartum (3). Out of those, 53 (2.6%) tested HIV positive and this yielded an approximated incidence of HIV-1 of 6.8 per 100 woman-years (95% CI: 5.1-8.8).

In a prospective study done by Ambuchi in Kenya at KNH in 2007, out of 500 pregnant women 4(0.8%) seroconverted during pregnancy (6). Majority of women were of ages 25-29 years (35%).

In Fako, Cameroon, a hospital based cohort study showed that the incidence(new) of HIV seroconversion in the course of pregnancy was 2.1%, this yielded an incidence rate of 6.8/100 woman-years(7).

Moodley et al conducted a cross-sectional study nested in a PMTC program which yielded an HIV incidence of 10.7/100 woman years (8). This showed HIV prevalence during pregnancy was four fold higher than in the nonpregnant population.

Binyerem et al carried out a cross-sectional survey to determine prevalence of HIV amidst pregnant women who were in labour with an unknown HIV status (unbooked) and those with a negative result early in the index pregnancy (9). This study was conducted in a Tertiary Hospital in Nigeria. The prevalence of undetected HIV infection amidst the total parturient in this study was 2.68% while the prevalence of HIV infection amidst unbooked parturient was 6.78%. HIV seroconversion occurred in 1.21% of parturient with an initial HIV status that was negative.

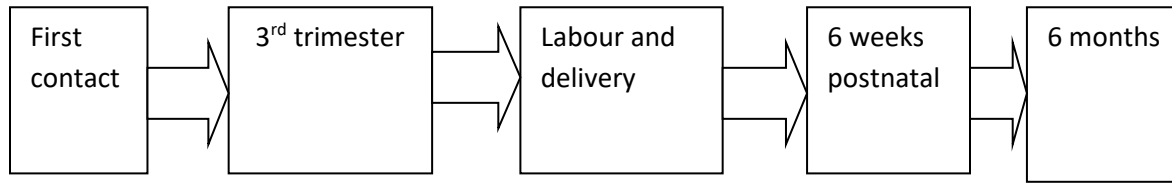
## 2.2 HIV retesting

Repeat HIV test during the third trimester, labour/delivery and postnatal period is crucial to identify and initiate treatment for pregnant women with incident HIV infection so as to prevent transmission of HIV perinatally.

WHO as well as NASCOP 2016 retesting recommendations for clients who test HIV-negative are as follows (10):

| Group                            | Recommendation  |
|----------------------------------|---|
| Pregnant and breastfeeding women | <ul style="list-style-type: none"><li data-bbox="467 663 1307 863">• All pregnant women (unless known HIV positive) should be counseled and tested for HIV during their first ANC visit and repeat testing conducted in the third trimester. The test (if negative) should be repeated at labour and delivery.</li><li data-bbox="467 884 1307 1083">• All breastfeeding mothers (unless known HIV positive) should be counseled and tested at 6 weeks postnatal visit. The HIV test (if negative) should be repeated 6 months and thereafter as per general population.</li><li data-bbox="467 1104 1307 1251">• Mothers should be counseled about the schedule for repeat HIV testing in pregnancy and postnatal as part of routine ANC and postnatal education</li><li data-bbox="467 1272 1307 1539">• All pregnant and breastfeeding women who are not tested, opt-out or decline HIV testing during the first contact should be offered HIV counseling and testing in subsequent visits with appropriate linkage and referral for prevention, care and support services</li></ul> |

**Figure 2: Testing schedule for pregnant and breastfeeding women (MOH 2018)(11)**



Retesting provides people with both the opportunity to ensure early HIV diagnosis and to go through ongoing health education on HIV prevention.

Although ART averts vertical transmission of HIV most effectively when given early in pregnancy, it is efficacious (more so when combined with ARV prophylaxis for infants) even when initiated late in pregnancy, at the time of delivery or during the breastfeeding period. Implementing the retesting guidelines averts new paediatric infections while also saving the downstream costs needed to provide ART to infected newborns.

### **2.3 Feasibility and acceptability**

HIV counseling and testing during labour can be emotional, but is important because it allows mothers and babies to receive PMTCT prophylaxis if previous identification of HIV infection has not occurred. Adoption of retesting guidelines should successfully increase retesting rates and identify incident(new) HIV infection during pregnancy hence contribute to low to nil rates of perinatal HIV transmission.

At North West London Hospital, data was retrospectively collected in a maternity wing to analyze figures on maternal uptake of repeat HIV test in the last trimester (12). Furthermore, a qualitative e-mail study of midwives was conducted to investigate barriers to taking part in the study. 2934 of 4134 women (71%) consented for the test and their results were available. Statistics were not available for 195 women (4.7%). In total, 663 of 4131 women (16%) were not offered the test. Out of 3273 women documented as having been given a test, 3177 (97.1%) agreed to receive. All the third-trimester tests were negative.80% of the midwives surveyed responded with a questionnaire feedback and pointed to nonexistent national policy and extra volume of work as barriers to implementing testing in 3rd trimester.

In a cross-sectional study conducted by Inwani in Kenya, at KNH,220 out of 253(87%) mothers of neonates gave consent to testing for HIV and 33(13%) declined to give consent (13). This gave acceptability rate to HIV testing in the early postnatal period of 87%.



In a qualitative study to understand women's experiences during early labor in Malawi 8 of 10 women had unknown HIV status while 2 of 10 already knew their HIV status but re-tested to update their status(14). Four of 10 women were found HIV-positive while 6 were HIV negative and women appreciated and accepted HIV testing and counseling. Testing was accepted as an important step to protect the infant from HIV infection. Counseling was regarded as beneficial for acceptance of HIV status.

In a labour ward in Togo, acceptability and feasibility of rapid HIV screening was studied(15). Amidst 1530 pregnant women who had been admitted for labour, 508 (32.2%) were included into this study. Details on screening for HIV were present in the charts of 359 women (71%). 467(92%) women agreed to get tested in the labour ward. The prevalence of HIV was 8.8% (95% CI: 6.4-11.7%). Amidst the 41 women identified during labour as living with HIV, 34% had not been screened for HIV during pregnancy. These were missed opportunities.

#### **2.4 Knowledge, attitude and practices of HCWs towards HIV testing services**

Knowledge and attitudes of health care workers towards retesting is likely to affect uptake of the guidelines. Assessment of the level of knowledge among HCWs will help determine how these national guidelines have been disseminated and if they are being implemented.

More women agree to be tested if testing is offered by healthcare workers. This provider initiated testing has been shown to result in more opportunities to test pregnant women for HIV. A Kenyan study among women attending MCH clinics to assess the potential for HIV testing, entry to infant feeding/counselling and HIV treatment at child health clinics found an increased uptake of 2.6 times with point-of-care testing (95% confidence interval = 1.4-5.1; P = 0.003). Of 124 women who had not accessed HIV testing during pregnancy, 98 tested in the study (79.0%). Measured by uptake and attitudes, HIV testing in child health clinics is acceptable. This could optimize entry into HIV treatment, infant feeding counselling and family planning services(16).

Assessing health care workers perspectives towards testing is important because it gives an assessment of how HIV testing is accepted. Nurses are part of HCWs that play an important role in HIV testing. A series of studies done among them showed they were generally positive about testing, but expressed the need for more training and managerial support. A hierarchical and didactic nursing culture affects counselling quality and the boundaries between voluntary informed consent and coercion can become rather blurred. Nurses are particularly stressed by breaking bad news and handling ethical dilemmas(17).

A cross sectional study was conducted in April-May 2010 among nurses and clinicians working in the government health care facilities in Mbeya City, south-western Tanzania(18) .Self-administered questionnaire was used to obtain relevant information from the study participants. A total of 402 (95% response rate) care providers were interviewed. The majority 304 (76%) were nurses. All the care providers reported to be aware of PITC services. However, 35% of them had inadequate knowledge of PITC and 269 (67%) reported to have ever offered PITC services. More than one-third of health providers did not routinely offer PITC leading to missed opportunity for early HIV diagnosis. On job and in-service training to improve PITC knowledge and supportive supervision for those trained was required.

Another cross-sectional study was conducted among doctors in a private tertiary hospital in Kenya to establish their Knowledge, attitude and practices towards HIV counselling and testing. Results showed that most (80%) of them reported offering HIV testing services to their patients though 63% had never attended any training in counselling. Awareness of HIV testing guidelines was low at 16%(19).

## **2.5 Guideline implementation and challenges**

The lack of clarity on the specific frequency and time points to conduct retests during pregnancy and the postnatal period can create confusion for programme implementers about when to provide retesting, contributing to suboptimal implementation. Studies have been done to assess implementation of repeat HIV testing and the factors associated with a lack of retesting. Most studies being done in south west and Nyanza regions of Kenya.

Anna J Rogers conducted a retrospective analysis of longitudinal data as well as a qualitative study in Kenya southwestern region on implementation of repeat HIV testing during pregnancy (20) (21). Results indicated that 90.2% of the women first came to the clinic at 1<sup>st</sup> or 2<sup>nd</sup> trimesters and only 27.5% of them had at the minimum four clinic visits, more than half (58.0%) of all women went to labour with no retest. The analysis showed that barriers to offering a repeat HIV testing for health care workers included large amounts of work, limitations on time, forgetting to check for retest eligibility, inconsistent numbers of clients, not enough space required for confidential HIV testing, challenges that relate to the HIV test kit supply chain and the design of the MOH booklet that has no provision for filling of several HIV test results. Factors considered as enablers to making better the uptake of repeat HIV test included client

dissemination of the benefits of antenatal care through word of mouth, healthcare workers cooperation and task shifting. Utilization of an electronic health record system could provide automatic reminders for retest eligibility.

In Kisumu County, a study done by M Lollah, showed retesting rate of 68.4 % (22). Several institutional factors were cited as factors affecting repeat HIV testing. Among them were: staffing issues, inadequate rooms and space, poor documentation, long queues and turnaround time and poor community support. Training on new guidelines was on very few people and was not updated regularly and in a timely manner. Industrial actions affected stability and service provision across the county. Recommendations from this study were that there should be improved awareness through strategies that ensure both mothers and health workers know about the guidelines. The other recommendation is for the government to involve counties and sub counties in implementation these National guidelines.

## **2.6 Study justification and utility**

The majority of children living with HIV are infected via mother-to-child transmission in pregnancy, during labour/delivery or breastfeeding.

Many pregnant women with HIV do not have obvious risk factors, and the only way to identify them would be by HIV testing. Universal testing emphasizes that all pregnant women be routinely screened for HIV after either individual or group counseling sessions.

Infant/child HIV infection is largely preventable by adhering to HTS guidelines which emphasize HIV retesting at various time-points. Retesting is fairly new in the national guidelines and therefore knowledge and attitudes towards retesting is likely to affect uptake of guidelines.

Proportion/rates of HIV retesting in labour/delivery and postnatal period are not well known in most parts of the country. It is critical that enablers be capitalized and barriers be addressed through a multi-faceted intervention program so as to implement successfully the national guidelines on HIV repeat testing during labour/delivery and postpartum period.

This study highlighted HIV retesting rates in labour/delivery and postnatal clinics as well as important barriers and enablers to improving HIV retesting among pregnant women who attend antenatal clinics at Pumwani Maternity hospital.

## **2.7 Research question**

What is the proportion of cases of missed opportunities for implementation of national guidelines on HIV retesting in labour/delivery and postpartum at Pumwani Maternity Hospital?

## **2.8 Study objectives**

### **2.8.1 Main objective**

To establish proportion of cases missed opportunity for HIV retesting in labour/delivery and post-partum as well as health care workers knowledge, attitudes and practices of those guidelines at Pumwani Maternity Hospital.

### **2.8.2 Specific Objectives**

1. To determine the proportion of cases of missed opportunity for HIV retesting in labour/delivery and six weeks postpartum at Pumwani Maternity hospital.
2. To evaluate knowledge and attitudes of health care workers at Pumwani Maternity Hospital with regards to HIV retesting guidelines during labour/delivery and at six weeks postnatal visit.

## **CHAPTER THREE: METHODOLOGY**

### **3.1 Study design**

This was a mixed methods survey.

### **3.2 Study setting**

The study was administered at the Antenatal Clinic, labour/postnatal ward and Maternal and Child health clinic at Pumwani Maternity Hospital.

PMH is an Obstetric and referral hospital specialized for delivery of expectant mothers in Nairobi, and adjacent districts. It is the largest referral Maternity Hospital in East Africa. It does have 2 theatres, 350 Obstetric beds, and 150 baby cots. Normal deliveries conducted per day are 50 – 100, and Caesarean Sections are 10–15 per day. The staff consist of 27 doctors (20 medical officers,4 specialist obstetricians/gynaecologist,3 paediatricians) 10 clinical officers,123 nurses(40 in maternity theatre,57 in labour ward and 26 in new born unit) and 100 community health volunteers.

In antenatal clinic, 60 mothers are seen on a daily basis. Other services offered within the facility include ART, HIV counseling, family planning services, child welfare services and adolescent health care.

### **3.3 Study population**

Mothers: An exit interview was administered to consecutive mothers in labour/postnatal wards and those attending routine 6 weeks immunization clinic after obtaining informed consent. Due to inconveniences made by the Covid 19 pandemic, there were very low numbers of mothers attending 6 weeks MCH clinics at this facility. A decision was made to conduct a follow up interview for those interviewed at labour. Ethical approval was given.

Health workers included doctors, clinical officers, nurses and counselors at ANC clinic, labour ward and MCH. They were purposively selected for in-depth interviews over the telephone as face to face interviews would pose a risk of exposure to Covid 19 infection.

### **3.4 Study period**

The study was conducted over a three month period between July 2020 and September 2020.

### **3.5 Study outcomes**

The study aimed to achieve the following outcomes:

- Estimate of proportion of cases of missed opportunities for repeat HIV test for during labour/delivery and 6 weeks immunization clinic.
- Missed opportunity was defined as proportion of women who (were not tested) do not know their current HIV status after labour/delivery and after 6 weeks maternal and child health clinic (MCH) attendance.
- Level of knowledge of HCWs workers on HTS in pregnancy and postpartum, their attitudes on the national guidelines and their practices which involved offering the test.

### **3.6 Selection and enrollment of patients**

The following were included in the study:

#### **3.6.1 Inclusion criteria**

Mothers who had delivered in the prior twenty four to seventy two hours and mothers attending 6 weeks immunization clinic who in both instances had a negative result during first ANC visit. Mothers who consented to a telephone interview conducted for the 6 weeks postnatal follow up.

Health care workers (Doctors, clinical officers, nurses and counselors) stationed at Antenatal Care Clinic, labour/postnatal ward and Maternal and Child health clinic who worked in the facility.

#### **3.6.2 Exclusion criteria**

The following were excluded from the study:

- (i) Known HIV positive pregnant women (documented).
- (ii) Lack of informed signed consent from either mothers or health care workers.

### 3.7 Samples size determination

The Fischer's formula was applied to deduce the sample size calculation for **mothers**.

$$n = \frac{z^2 p (1-p)}{d^2}$$

$d^2$

$n$  = sample size

$z$ =standard normal deviate of desired level of confidence (1.96)

$p$ =Proportion in target population with specific characteristics (68% of mothers get retested at ANC) M Lollah study in Kisumu county.

$d$ = desired study precision (0.05)

**n= 335**

A ratio of 1:1 was used for mothers in labour/postnatal ward and those in MCH clinic.

Purposive sampling was used for **health care workers**, 15 participants were included, and some were key informants in managerial and administrative positions.

### 3.8 Study procedure

The principal investigator (PI) trained 2 research assistants on the outline of HIV testing guidelines in labour/delivery and postpartum period as in the National guidelines by NASCOP 2016 and MOH 2018. A preliminary visit to the study location was conducted to introduce the research assistants to the clinical staff prior to commencement of the study.

#### Missed opportunity for HTS guideline implementation

Recruitment Process: Research team identified mothers in labour/postnatal ward and at MCH clinic, approached them, and elucidated the aim of the study then allowed them to give voluntary consent. Those with a documented initial HIV positive result were exempted. Those with a documented initial HIV negative result proceeded.

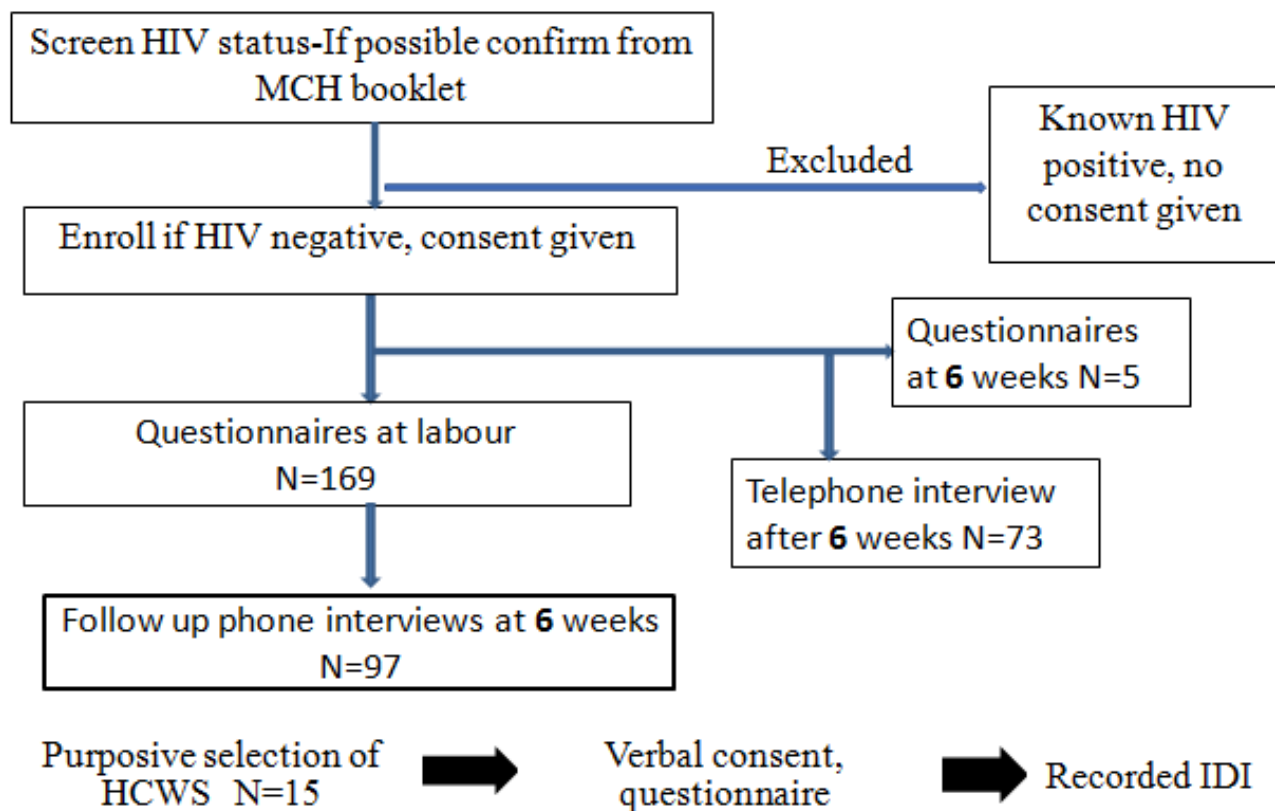


Consent Signing: Research team ensured the mother understood the information provided on the consent form. Consent obtained was voluntary and free from coercion. Once understood and agreed the mothers signed the consent form. Verbal consent was given for the telephone interviews conducted to obtain information regarding retesting at 6 weeks.



Interview Process: A structured questionnaire was then administered. Those identified to have had a missed opportunity for testing were referred to a counselor for HIV testing on voluntary basis. The questionnaire collected data as in (Appendix 4a)

**Figure 3 Summary of study procedure**



### Knowledge and attitude of HCW

Sensitization regarding the study was conducted to administrative staff then individually to those who agreed to participate in the study. Following verbal consent, HCW were interviewed over the telephone, using standard pretested questionnaire to determine knowledge on HTS. The questionnaire collected data as in (Appendix 4b). The data included:

- Age, level of education and job type.
- Training (if any) received on HIV testing in pregnancy and postpartum period.
- Awareness of core principles, protocol and time taken for testing.

### 3.9 Data collection, management and analysis

Survey forms were coded, entered and managed in Microsoft Access database. The information was exported to SPSS version 23.0 for analysis of statistics. Descriptive statistics were utilized to give a description of the study population (both HCWs and post-natal mothers). Rates of HIV test uptake was computed as proportions with 95% confidence intervals.



Data from key informant interviews was coded according to emerging themes and subthemes using thematic analysis approach. It was then presented as frequency tables of codes and direct quotes from the participants.

Audio recordings from in-depth interviews were transcribed. The emergent themes were identified, noted down using excel and presented in tabular form using thematic analysis approach.

### **3.10 Ethical considerations**

1. Authorization was obtained from the Kenyatta Hospital Ethics research committee to collect data and evaluate it as part of the Thesis Dissertation. Reprints of this protocol, the informed consent form and any subsequent alteration to either document were handed over to the above named committee for written approval before beginning the study.
2. Any modifications to the study protocol that affect the patient's volition to take part in the study, the intent of the study or patient safety were submitted to the KHERSC for written approval prior to incorporating these changes in the research procedure.
3. The goal of the study was carefully made clear to the HCWs and eligible mothers in labour and postpartum so as to obtain written Consent prior to enrolling them in the study.
4. Benefits that participants accrued from the study included referral for HTS to any competent counselor for the missed cases, recommendations for trainings for HCWs who showed knowledge gaps in current HIV retesting guidelines in pregnancy and postpartum period.
5. Strict confidentiality was observed all through the study period, upheld by participating investigators, research personnel and the study institutions. The study participants were given study identification numbers and no personal identification data was recorded. No information concerning the individual study findings was released to any unofficial third party with no prior written approval of the study institution or the Ethics Research Committee.

6. The overall study findings will be shared with the Specialists in HIV care, staff running the respective clinics/wards in hopes of knowing the knowledge gap for the guidelines so as to have an action plan. The study findings will also be presented to the University of Nairobi (UON) Department of Pediatrics and Child Health Academic Staff and Students in fulfillment of the requirements of the M.Med Program.

## CHAPTER FOUR: FINDINGS AND RESULTS

### PART ONE: QUANTITATIVE DATA

#### Social demographics characteristics

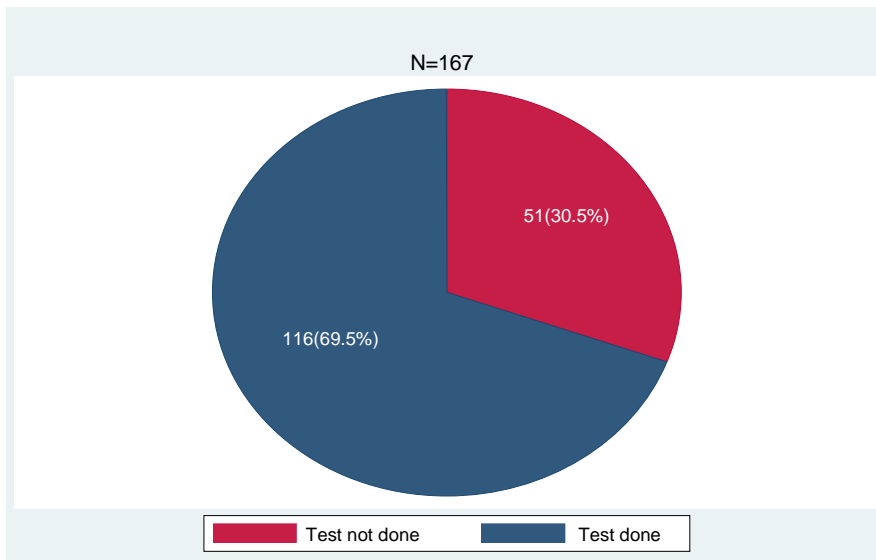
There were 242 women who participated in the interview. Of these, 131 (54.1%) were aged 25-34 years. The mean age was 27 yrs (IQR 22-32yrs) with the youngest being 16 years old and the oldest being 43 years old. Majority of the women were married 195(80.6%), 184(76.1%) had attained secondary level education and above and 138(57.3%) were unemployed. Majority of the women 143(59.1%) reported to have planned for their pregnancy and most 140(57.9%) had a spontaneous vaginal delivery (SVD). The findings are summarized in the table below.

**Table 1: Sociodemographic characteristics**

| Characteristic    |                    | Freq. | Percent (%) |
|-------------------|--------------------|-------|-------------|
| Age(Years)        | 24 yrs and below   | 89    | 36.8        |
|                   | 25-34 yrs          | 131   | 54.1        |
|                   | 35 and above       | 22    | 9.1         |
| Education level   | None               | 1     | 0.4         |
|                   | Primary            | 57    | 23.6        |
|                   | Secondary          | 111   | 45.9        |
|                   | Tertiary           | 73    | 30.2        |
| Marital status    | Married            | 195   | 80.6        |
|                   | Single             | 42    | 17.4        |
|                   | Separated/Divorced | 4     | 1.7         |
|                   | Widowed            | 1     | 0.4         |
| Occupation        | None               | 138   | 57.3        |
|                   | Self-employed      | 59    | 24.5        |
|                   | Employed           | 44    | 18.3        |
| Type of delivery  | SVD                | 140   | 57.9        |
|                   | CS                 | 102   | 42.2        |
| Planned pregnancy | Yes                | 143   | 59.1        |
|                   | No                 | 99    | 40.9        |

### HIV retesting at Labor Ward

There were 170 women interviewed at labor ward. Majority of the women 114(67.5%) reported lack of awareness of need for HIV retesting in labor ward. Among the ones interviewed in labour ward, 116(69.5%) were retested for HIV, of which 43(37.1%) were aware while 73(62.9%) were not aware of the need of an HIV retest. Most women 121(73.3%) reported to know their partners' HIV status. Of the 44 who did not know their partners status, 14(31.8%) did not have the test done at labor ward.

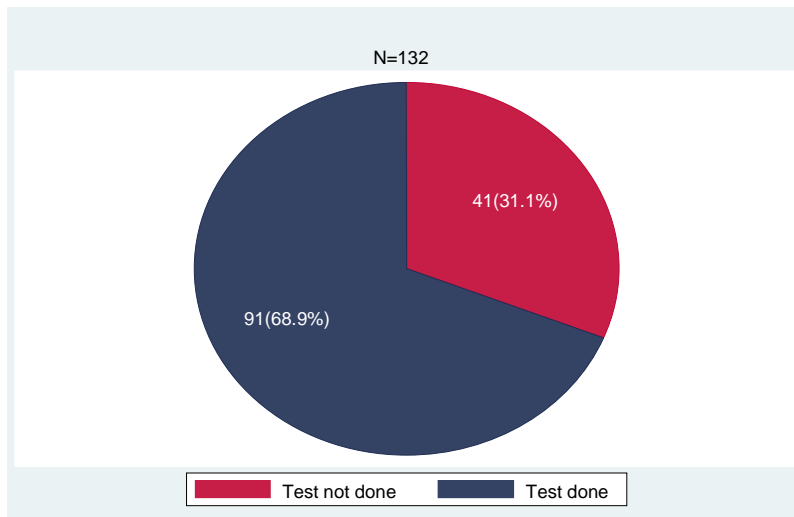


**Figure 4: HIV retesting in labour**

For the women who were not tested in labor ward, 45(88.2%) reported not to have been approached by a healthcare worker while 6(11.8%) did not give consent. All the women 51(30.5%) who were not tested in labor ward expressed interest of having the test done during the interview.

### **HIV retesting rate at Labor ward, subgroup**

Out of the 170 women interviewed at labour, 134 women were followed up at 6 weeks postpartum. Only 97 (72.4%) women were successfully followed up. Among the 134, 91(68.9% reported to have a HIV test done in labor ward among which 32(35.2%) reported awareness while 59(64.8%) were not aware. A total of 41(31.1%) mothers who delivered in Pumwani did not have a HIV test done. Of these mothers, 37(28%) were not approached by a healthcare worker while 4(3%) did not consent.



**Figure 5: HIV retesting in labour ward, subgroup**

The crude association model showed an association between women who reported awareness of retesting for HIV in labour ward (OR 2.4(1.1, 5.31) p=0.028) and having the test done. Women who were aware that a HIV repeat test was supposed to be done in Labour ward were twice likely to have the test done than women who were not aware.

The adjusted model showed no significant association of factors associated with HIV testing in labour ward.

**Table 2: Factors associated with HIV retesting in labour ward**

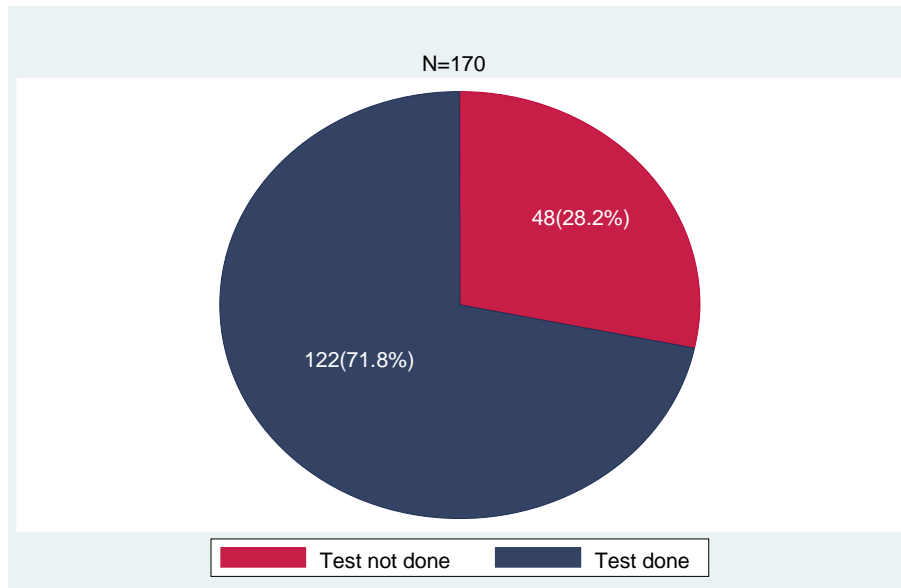
| Characteristic                                 | Test Done (%)<br>N=116 | Test not done (%)<br>N=51 | COR (95%CI)    | P value      | AOR(95%CI)     | P value |
|--|------------------------|---------------------------|----------------|--------------|----------------|---------|
| <b>Age</b>                                     |                        |                           |                |              |                |         |
| 25-34 yrs                                      | 61 (52.6)              | 28(54.9)                  | 1 (Reference)  |              | 1 (Reference)  |         |
| 24 yrs and below                               | 49(42.2)               | 17(33.3)                  | 1.32(0.6, 2.6) | 0.440        | 1.64(0.7, 3.6) | 0.222   |
| 35 yrs and above                               | 6(5.2)                 | 6(11.8)                   | 0.46(0.1, 1.5) | 0.210        | 0.38(0.1,1.6)  | 0.192   |
| <b>Marital status</b>                          |                        |                           |                |              |                |         |
| Married  | 95(81.9)               | 42 (82.3)                 | 1 (Reference)  |              | 1 (Reference)  |         |
| Single   | 19(16.4)               | 7(13.7)                   | 1.2(0.4, 3.1)  | 0.704        | 1.08(0.3, 3.2) | 0.887   |
| Other  | 2(1.7)                 | 2(4)                      | 0.44(0.1,3.3)  | 0.422        | 0.55(0.1, 4.7) | 0.591   |
| <b>Education level</b>                         |                        |                           |                |              |                |         |
| Primary  | 38(32.8)               | 12(23.5)                  | 1 (Reference)  |              | 1 (Reference)  |         |
| Secondary and above                            | 78(62.7)               | 39(76.5)                  | 0.63(0.3, 1.3) | 0.232        | 0.58(0.2,1.3)  | 0.206   |
| <b>Awareness of need for retesting for HIV</b> |                        |                           |                |              |                |         |
| No   | 73(62.9)               | 41(80.4)                  | 1 (Reference)  |              | 1 (Reference)  |         |
| Yes  | 43 (37.1)              | 10(19.6)                  | 2.4(1.1, 5.3)  | <b>0.028</b> | 2.02(0.8, 4.6) | 0.093   |
| <b>Awareness of partner HIV status</b>         |                        |                           |                |              |                |         |
| No   | 30(26.5)               | 14(28)                    | 1 (Reference)  |              | 1(Reference)   |         |
| Yes  | 83(73.5)               | 36(72)                    | 1.08(0.1, 2.3) | 0.847        | 0.9(0.3, 2.1)  | 0.801   |
| <b>Planned pregnancy</b>                       |                        |                           |                |              |                |         |
| No   | 46(39.7)               | 22(43.1)                  | 1 (Reference)  |              | 1 (Reference)  |         |
| Yes  | 70(60.3)               | 29(56.9)                  | 1.15(0.5, 2.2) | 0.673        | 1.1(0.5, 2.5)  | 0.724   |
| <b>Type of delivery</b>                        |                        |                           |                |              |                |         |
| SVD  | 61(52.6)               | 32(62.7)                  | 1 (Reference)  |              | 1 (Reference)  |         |
| CS   | 55(47.4)               | 19(37.3)                  | 1.51(0.7, 2.9) | 0.225        | 1.62(0.6, 6.1) | 0.210   |

**HIV retesting at 6 weeks postpartum.**

A total of 170 women were interviewed at 6weeks postpartum to get information on HIV retesting. Among them 122(71.8%) reported to have a repeat HIV test. Only 68(40%) of the women were aware of a repeat HIV test at 6 weeks postpartum.

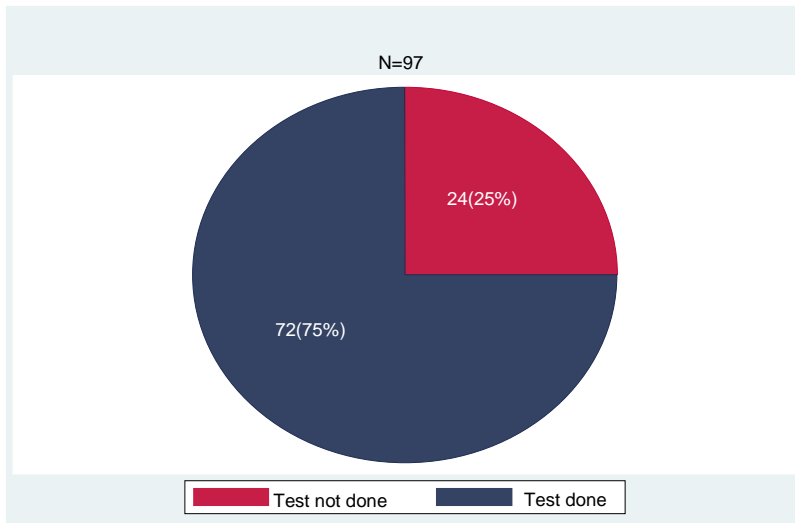
Among the ones not tested, 47 (27.6%) women reported not to have been approached by a healthcare worker while only 1 did not give consent. 32(78%) of women not tested for HIV expressed interest in having a HIV test done during the interview. Below were the results.

**Figure 6: HIV retesting at 6 weeks**



**Follow up clients at 6 weeks postpartum**

Of the 97 women followed up at 6 weeks postpartum, 72(75%) were retested for HIV. All the 24 women who did not have the HIV test done reported not to have been approached by a healthcare worker. Only 46(47.9%) of the women were aware of a repeat HIV test at 6 weeks postpartum.



**Figure 7: HIV retesting at 6 weeks, followed up patients**

**Table 3: Association of awareness and retesting at 6 weeks**

| Awareness | HIV test done |            | COR             |
|-----------|---------------|------------|-----------------|
|           | No            | Yes        |                 |
| No        | 40(83.3%)     | 62(50.8%)  | 1 (Reference)   |
| Yes       | 8 (16.7%)     | 60 (49.2%) | 4.8 (2.1, 11.2) |

**$p=0.000$**

The test of association showed a significant association between awareness and testing for HIV 6 weeks postpartum. Those who were aware that a HIV test was supposed to be done at 6 weeks had a 4.8 times higher odds of having the test done compared to those who were not aware.

## **PART TWO: QUALITATIVE DATA**

### **In-depth interviews**

We interviewed 15 Healthcare Workers (HCWs) who included clinicians, Nurses, counselors within the maternity unit at Pumwani Hospital. The HCW participants were inclusive of those in administrative positions as well as those providing direct care to patients. All interviews were conducted virtually either through zoom or whatsapp and were recorded then transcribed



verbatim. Two independent coders then developed a code book based on 3 transcripts each, which was later merged at consensus coding. Themes were then arrived at through an iterative process of content analysis using both deductive and inductive processes.

Of the HCWs interviewed, 13 (86.7%) were female and slightly more than half 8 (53.3%) were between 31-40 years old. In regards to their level of education, 5 (33.3%) had attained a bachelor’s degree or higher and 14 (93.3%) had received HTS training. Time since HTS training varied with only 4 (28.6%) receiving training within the current year and 3 (21.4%) receiving training in the past year.

**Table 4: Sociodemographic characteristics of HCWs**

| Characteristics       |                     | Frequency | Percentage |
|-----------------------|---------------------|-----------|------------|
| Age(Years)            | <30                 | 1         | 6.7        |
|                       | >50                 | 4         | 26.7       |
|                       | 31-40               | 8         | 53.3       |
|                       | 41-50               | 2         | 13.3       |
| Gender                | Female              | 13        | 86.7       |
|                       | Male                | 2         | 13.3       |
| Job type              | Healthcare provider | 14        | 93.3       |
|                       | Managerial          | 1         | 6.7        |
| Education level       | Bachelor’s degree   | 5         | 33.3       |
|                       | Certificate         | 3         | 20.0       |
|                       | Diploma             | 5         | 33.3       |
|                       | Masters or higher   | 2         | 13.3       |
| HTS training          | No                  | 1         | 6.7        |
|                       | Yes                 | 14        | 93.3       |
| Years of HTS training | 2009                | 2         | 14.3       |
|                       | 2012-2018           | 5         | 35.5       |
|                       | 2019                | 3         | 21.4       |
|                       | 2020                | 4         | 28.6       |

The HCWs were tested on their knowledge of HTS guidelines. On **Core HTS principles**, majority 11 (73.3%) described them as - Consent, confidentiality, counseling, correct results and linkage to care. A similar number defined the **HTS Protocol as** -Pretest counseling, HIV test, Posttest counseling, assess other conditions, referral and linkage to care. Approximate total testing time was mostly 30 minutes.

**Table 5: Core principles of HTS**

| <b>Core principles of HTS</b>   | <b>Frequency</b> | <b>Percentage</b> |
|---|------------------|-------------------|
| Test all, no opt out, if positive immediately start on treatment                  | 1                | 6.7               |
| Consent, confidentiality, counseling, correct results, connection/linkage to care | 11               | 73.3              |
| Consent, confidentiality, correct results   | 3                | 20.0              |
| <b>Total</b>  | <b>15</b>        | <b>100.0</b>      |

**Table 6: Protocol for HTS**

| <b>Protocol for HTS</b>  | <b>Frequency</b> | <b>Percentage</b> |
|--|------------------|-------------------|
| Pretest counseling, HIV test, Posttest counseling, assess other conditions, referral and linkage to care | 11               | 73.3              |
| Pretest counseling, HIV test, Posttest counseling  | 1                | 6.7               |
| Pretest counseling, HIV test and Posttest counseling with risk reduction plan                            | 3                | 20.0              |
| <b>Total</b>   | <b>15</b>        | <b>100.0</b>      |

**Table 7: Approximate total testing time**

| <b>Approximate total testing time</b> | <b>Frequency</b> | <b>Percentage</b> |
|---------------------------------------|------------------|-------------------|
| 10                                    | 1                | 6.7               |
| 15                                    | 4                | 26.7              |
| 20                                    | 3                | 20.0              |
| 30                                    | 6                | 40.0              |
| 45                                    | 1                | 6.7               |
| <b>Total</b>                          | <b>15</b>        | <b>100.0</b>      |

Four main themes were arrived at:

### **Varied knowledge on repeat testing guidelines among HCWs**

Some of the health care workers were quite familiar with the guidelines while others were not quite sure what was stipulated for repeat HIV testing among women in labour or during delivery and thereafter..

“What I know any mother who comes in who is in labour, despite the last time they were tested they still need to be offered counseling and testing. But if they come in the advanced stage of labour, you can wait the mother delivers then you do the testing. Still at six weeks they still offer when they go for the post-natal check, just in case of missed opportunities.” **Participant 12**

“We do not have much information or in communication with the patients on this, the only thing we can do is to call the PMTCT nurse to come and do it but I think every nurse who is working at the labor ward, we need to have these information.” **(Participant 3)**

### **Standard hospital procedures are supportive of retesting guidelines**

The HCWs noted that it was within hospital procedures to only admit mothers who had been retested into the postnatal wards as well as only discharge those who had been retested. These procedures were targeted at enhancing implementation of the guidelines.

“Even the postnatal nurses do not receive (the mother) if that second counseling and testing is not done, it is must together with the ANC profile.” **(Participant10)**

“To me I think they (guidelines) are doing a good job and because we have the mentor mothers and the PMTCT nurses doing the job, so chances of missed opportunities for testing are very low. “ **(Participant 11)**

“So, during admission if you see a mother who has not been tested, we inform the PMTCT department so they follow up on that or maybe if you find a mother who already has been admitted in the ward, and you find out the patient has not been tested you still notify the PMTCT team then they do it as soon as possible.” **(Participant 5)**

### **Challenges in implementing the guidelines**

“On challenges maybe due to burnout the nurses may not have good time to assess the risks among HIV positive mothers or even those who are HIV negative. So sometimes there is a lot of work load and also at 6 weeks we miss on retesting because of workload.” **Participant 6**

“We tend to actually miss out the mothers when bring their babies at six weeks, unfortunately place like Pumwani we are sometimes a bit busy, okay the workload is high and the counselors are few, so you realized that sometimes we are unable to test all the mothers, however much we are actually trying to pull up our socks.” **Participant 4**

“And then the patient’s attitude, you know you cannot force someone, I have to plead, and that is a barrier still. And then you find, from my scenario I find patients who antenatal were HIV positive, but some of them rub out the results from the antenatal clinic or they know they are positive but maybe wherever they started their antenatal clinic they request someone to write they are negative.” **Participant 12**

### **There is need for regular updates or training on the HIV retesting guidelines**

“I think for me what I would say is that most of us having no good knowledge, we can't say we are proud of the knowledge we have about HIV and everything concerning it. So training should be there every now and then, and you know with this HIV things, like the time I was in labor ward I think some things changed.” **Participant 14**

“So, if everyone else is trained because most of the time you find that the project staff is trained alone and the other staffs are not. If everyone in the facility is aware of these guidelines that could make our work easier.” **Participant 7**

## CHAPTER FIVE: DISCUSSION

The key study findings were that the retesting rate at labour ward was 69.5% while at 6 weeks it was 71.8%. Awareness of the need to be retested influenced the retesting rate by 2-5 times. Among all the interviewees 54.1% were aged 25-34 years. The mean age was 27 yrs. This finding was similar to a study conducted by M Lollah where the average age was 25 years (22). Majority of the women were married, three quarters of them had attained secondary level education and above and half of them were unemployed. This findings were similar to a study conducted by Kinuthia et al (3). Slightly more than half of the women reported to have planned for their pregnancy and a similar number had a spontaneous vaginal delivery (SVD).

There were 170 women interviewed at labor ward. Majority of the women 114(67.5%) reported lack of awareness of need for HIV retesting in labor ward. The retesting rate at labour ward was lower compared to a feasibility study in Togo which showed overall, 467(92%) women accepted HIV testing in the labour ward. For the women who were not tested in Labor ward, majority reported not to have been approached by a healthcare worker while one tenth did not give consent. It is feasible to retest even during labour hence HIV screening in labour rooms needs to be routinely implemented to reduce missed opportunities for intervention aimed at HIV care and prevention, especially PMTCT (15).

There was an association between the reported awareness of retesting for HIV in labour ward (OR 2.4(1.1, 5.31)  $p=0.028$ ) and having the retest done. Women who were aware that a HIV repeat test was supposed to be done in Labour ward were twice likely to have the test done than women who were not aware. The test of association at six weeks showed that those who aware of the need for a retest were 5 times likely to be retested. This implies that if mothers are educated on the resting schedule and importance from their first ANC visit, the retesting rates could increase. This requires dedicated staff trained to implement these guidelines. Collaborative qualitative study showed the need for these trainings updates to HCWs might help significantly reduce missed opportunities for retesting more so as they pass this knowledge to the mothers.

Of the HCWs interviewed, majority was female and slightly more than half were between 31-40 years old. In regards to their level of education, almost half of them had attained a bachelor's degree or higher and a majority had received HTS training. These socio demographic findings were comparable to a Kenyan study in Nyanza by Ann Rogers et al (21).

The HCWs were able to demonstrate knowledge of Core HTS principles, with majority describing them correctly. A similar number defined the HTS Protocol correctly. A study assessing the core principles of HTS among doctors showed more than 90% were knowledgeable(19). Time since HTS training varied, with only half of them receiving training within the past two years. Training was mostly done to PMTCT nurses and they were heavily relied upon. This implies that the hospital is not entirely independent and relies on task shifting to NGOs.

Among the challenges identified that hinder implementation of HIV retesting guidelines included stock outs, home deliveries, high workload. These factors were similar to a study done by Ann Rogers et al (20).Some of the missed cases could be attributed to the high workload demonstrated in the qualitative arm of this study.

### **5.1 Study strengths**

The use of a mixed study methods that incorporated both qualitative and quantitative work enabled us to obtain varied forms of data.

### **5.2 Study limitations**

The study was subject to a number of limitations. Firstly, Pumwani Maternity hospital has extensive mentoring and support by the county and NGOs with PMTCT programmes that other facilities may not have. Secondly the study was carried out over three months and this might not factor in the seasonal variability. Lastly, we couldn't verify information given via telephone interviews especially HIV retests at week 6.

### **Conclusion**

The retesting rate at labour in Pumwani was fair at 69.5%, while the retesting rate at 6 weeks was higher at 71.8%. According to our study, majority of the women lacked awareness on the need

for retesting at labour/delivery. A dedicated team, trained and tasked to implement the guidelines can help significantly reduce missed opportunities for retesting.

### **Recommendations**

- HIV screening in labour rooms needs to be routinely implemented to reduce missed opportunities for intervention aimed at HIV care and prevention, especially PMTCT
- Improve awareness of the pregnant mothers on need for HIV retest and emphasize the time points.
- Training and continuous education on key areas like HTS.

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## APPENDICES

### Appendix 1: TIME FRAME

| Time Frame                                | 2019 |     |       |       |     |      | 2019 |     |     | 2020 |      |      |     |      | 2021 |
|---|------|-----|-------|-------|-----|------|------|-----|-----|------|------|------|-----|------|------|
| Activity                                  | Jan  | Feb | March | April | May | June | July | Aug | Sep | June | July | July | Aug | Sept | Jan  |
| Proposal development and defense          |      |     |       |       |     |      |      |     |     |      |      |      |     |      |      |
| Ethical clearance                         |      |     |       |       |     |      |      |     |     |      |      |      |     |      |      |
| Data collection                           |      |     |       |       |     |      |      |     |     |      |      |      |     |      |      |
| Data Analysis                             |      |     |       |       |     |      |      |     |     |      |      |      |     |      |      |
| Thesis and manuscript writing and defense |      |     |       |       |     |      |      |     |     |      |      |      |     |      |      |

## Appendix 2: STUDY BUDGET

| Category             | Remarks  | Units      | Unit Cost (KShs) | Total (KShs)   |
|----------------------|--|------------|------------------|----------------|
| Proposal Development | Printing drafts                                      | 1000 pages | 5                | 5,000          |
|                      | Proposal Copies                                      | 8 copies   | 500              | 4,000          |
| Data Collection      | Stationery Packs (Pens, Paper and Study Definitions) | 10         | 100              | 1000           |
|                      | Training research assistants                         | 1 day      | 2000             | 2,000          |
|                      | Research assistants (2)                              | 8 weeks    | 24000 X 2        | 48,000         |
| Data Analysis        | Statistician   | 1          |                  | 50,000         |
| Thesis Write Up      | Computer Services                                    |            |                  | 5,000          |
|                      | Printing drafts                                      | 1000 pages | 5                | 5,000          |
|                      | Printing Thesis                                      | 10 copies  | 500              | 5,000          |
| Contingency funds    |  |            |                  | 20,000         |
| <b>Total</b>         |  |            |                  | <b>145,000</b> |

The Study funding will be obtained through government of Kenya sponsorship.

### **Appendix 3: CONSENT FORM**

Title of Study: Healthcare workers knowledge, attitude and practices on National Guidelines on HIV testing services in labour/delivery and postpartum at Pumwani Maternity Hospital.

Principal Investigator: Dr. Justina K Njuki (MB ChB)

Paediatrics Resident, University of Nairobi

Telephone number: 0724362874

Co-Investigators: Associate Prof. Dalton Wamalwa (MB ChB, MMED, MPH)

Chairperson Department of Paediatrics and child health

University of Nairobi

Tel no: 0721239493

#### **INTRODUCTION:**

The purpose of this consent form is to give you the information you will need to help you decide whether or not to be a participant in the study. Feel free to ask any questions about the purpose of the research, what happens if you participate in the study, the possible risks and benefits, your rights as a volunteer, and anything else about the research or this form that is not clear. When we have answered all your questions to your satisfaction, you may decide to be in the study or not. This process is called 'informed consent'. Once you understand and agree to be in the study, I will request you to sign your name on this form. You should understand the general principles which apply to all participants in a medical research: i) Your decision to participate is entirely voluntary ii) You may withdraw from the study at any time without necessarily giving a reason for your withdrawal iii) Refusal to participate in the research will not affect the services you are entitled to in this health facility or other facilities. We will give you a copy of this form for your records.

May I continue? YES / NO

This study has approval by The Kenyatta National Hospital-University of Nairobi Ethics and Research Committee protocol No. \_\_\_\_\_

## **WHAT IS THIS STUDY ABOUT?**

The researchers listed above and other assistants are interviewing mothers in labour/delivery and at immunization clinic. The purpose of the interview is to find out if an HIV test was done at those particular timelines. Participants in this research study will be asked questions about their experience during the test and the results. Participants will also have the choice to undergo an HIV test if it was not done. There will be approximately 335 participants in this study randomly chosen. We are asking for your consent to consider participating in this study.

## **WHAT WILL HAPPEN IF YOU DECIDE TO BE IN THIS RESEARCH STUDY?**

If you agree to participate in this study, you will be interviewed by a trained interviewer in a private area where you feel comfortable answering questions. The interview will last approximately 30 minutes. The interview will cover topics such as partner testing.

After the interview and you have not been tested, you will be referred to counselors available at the facility for voluntary testing.

## **ARE THERE ANY RISKS, HARMS DISCOMFORTS ASSOCIATED WITH THIS STUDY?**

There will be no risks to you during this study. We will keep everything you tell us as confidential as possible. If there are any questions you do not want to answer, you can skip them. You have the right to refuse the interview or any questions asked during the interview

## **ARE THERE ANY BENEFITS BEING IN THIS STUDY?**

You may benefit by receiving free HIV testing for those not tested and are eligible and willing. We will refer you to this same hospital for care and support where necessary. Also, the information you provide will help us better understand retesting rates in pregnancy and postpartum and case of missed opportunities.

**WILL BEING IN THIS STUDY COST YOU ANYTHING?**

No. There will be no costs as we target mothers already at the facility coming to receive services offered. In case one needs to be tested for HIV, it will be free.

**WILL YOU GET REFUND FOR ANY MONEY SPENT AS PART OF THIS STUDY?**

No financial reward will be accorded and no money is expected from the participants

**WHAT IF YOU HAVE QUESTIONS IN FUTURE?**

If you have further questions or concerns about participating in this study, please call or send a text message to the study staff at the number provided at the top of this page.

For more information about your rights as a research participant you may contact the Secretary/Chairperson, Kenyatta National Hospital-University of Nairobi Ethics and Research Committee Telephone No. 2726300 Ext. 44102 email [uonknh\\_erc@uonbi.ac.ke](mailto:uonknh_erc@uonbi.ac.ke).

The study staff will pay you back for your charges to these numbers if the call is for study-related communication.

**WHAT ARE YOUR OTHER CHOICES?**

Your decision to participate in research is voluntary. You are free to decline participation in the study and you can withdraw from the study at any time without injustice or loss of any benefits.

## CONSENT

### Participant's statement

I have read this consent form or had the information read to me. I have had the chance to discuss this research study with a study counselor. I have had my questions answered in a language that I understand. The risks and benefits have been explained to me. I understand that my participation in this study is voluntary and that I may choose to withdraw any time. I freely agree to participate in this research study. I understand that all efforts will be made to keep information regarding my personal identity confidential.

Participant printed name: \_\_\_\_\_

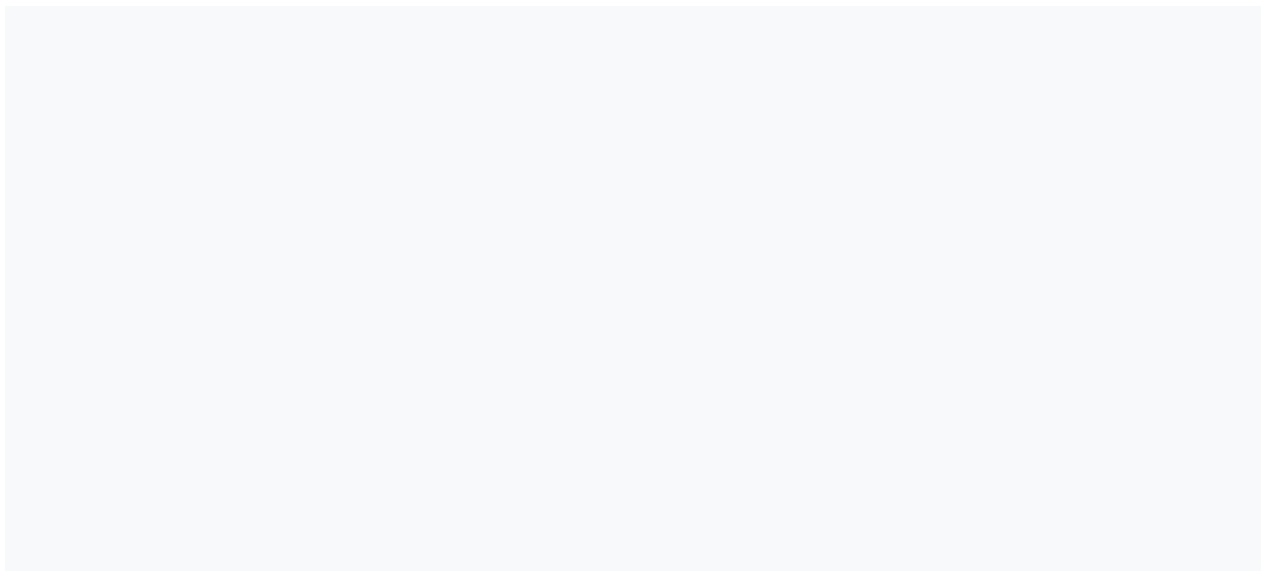
Participant signature / Thumb stamp \_\_\_\_\_ Date \_\_\_\_\_

### Researcher's statement

I, the undersigned, have fully explained the relevant details of this research study to the participant named above and believe that the participant has understood and have willingly and freely given his/her consent.

Researcher's Name: \_\_\_\_\_ Date: \_\_\_\_\_

Signature \_\_\_\_\_



### **Kiambatisho 3: FOMU YA IDHINI**

Kichwa cha utafiti: Idadi ya kesi zilizokosekana katika utekelezaji wa miongozo ya kitaifa juu ya kurejelea kipimo ya ukimwi wakati wa kujifungua na baada yakujifungua na maarifa , mitazamo na mazoeaya wafanyikazi wa huduma ya afya katika Hospitali ya uzazi ya Pumwani.

Mpelelezi mkuu: Dk Justina K Njuki (MBCHB)

Mwanafuzi wa shahada za ushamili Idara ya watoto na afya ya watoto, Chuo Kikuu cha Nairobi

Nambari ya simu: 0724362874

Mchunguzi mwenzake: Profesa mshiriki Dalton Wamalwa (MBCHB, MMED, MPH)

Mwenyekiti Idara ya watoto na afya ya watoto

Chuo Kikuu cha Nairobi

Nambari ya simu: 0721239493

### **UTANGULIZI:**

Kusudi la mazungumzo haya ya simu ni kukupa habari ambayo utahitaji kukusaidia kuamua ikiwa utataka kua mshiriki katika utafiti. Jisikie huru kuuliza maswali yoyote juu ya madhumuni ya utafiti, nini kinatokea ikiwa utashiriki katika utafiti, hatari na faida zinazowezekana, haki yako kama mwenye hiari, na kitu kingine chochote juu ya utafiti ambao hau wazi. Wakati tumejibu maswali yako yote kwa kuridhika kwako, unaweza kuamua kuwa kwenye utafiti au la.

Utaratibu huu unaitwa 'ridhaa iliyo na habari. Unapaswa kuelewa kanuni za jumla ambazo

zinawahusu washiriki wote katika utafiti wa matibabu: i) Uamuzi wako wa kushiriki ni hiari ii)

Unaweza kujiondoa kutoka kwa utafiti wakati wowote bila kutoa sababu ya kujiondoa kwako iii)

Kukataa kushiriki utafiti hautaathiri huduma unayostahiki katika kituo chochote cha afya.

Naweza kuendelea? NDIO LA

Utafiti huu umedhibitishwa na Kamati ya Maadili ya KNH-UON nambari \_\_\_\_ **P555 / 07/2019** \_\_\_\_



## **UTAFITI HUU WAHUSU NINI?**

Watafiti waliotajwa hapo juu na wasaidizi wengine wanaweza kuwa wamekuhoji wakati wa kujifungua. Madhumuni ya mahojiano ni kujua ikiwa kipimo ya ukimwi ilifanywa katika kliniki ya chanjo ya wiki 6. Washiriki wa utafiti huu wataulizwa maswali juu ya uzoefu wao wakati wa mtihani na matokeo. Washiriki pia watakuwa na chaguo la kufanya kipimo ya ukimpwi ikiwa haikufanywa katika kituo cha chaguo lao. Kutakuwa na washiriki takriban 168 katika utafiti huu waliochaguliwa kwa nasibu. Tunaomba idhini yako kufikiria kushiriki katika utafiti huu.

Wafanyi kazi wa huduma ya afya watahusika katika mahojiano ya kina kulingana na kichwa cha utafiti.

## **NINI ITAFANYIKA KAMA UTAAMUA KUSHIRIKI KATIKA HUU UTAFITI?**

Ikiwa utakubali kushiriki katika utafiti huu, utahojiwa katika eneo la kibinafsi ambapo unahisi vizuri kujibu maswali kupitia simu. Mahojiano yataendelea takriban dakika 15- 30. Mahojiano yatashughulikia mada kama vile upimaji wa mshirika.

Baada ya mahojiano na haujapimwa, ni vyema kuenda kwa washauri wanaopatikana katika kituo cha chaguo lako kwa upimaji wa hiari.

Wafanyi kazi wa huduma ya afya watapata nafasi ya kujadili juu ya mambo yanayohusika katika kichwa cha utafiti. Mwongozo wa mahojiano hayo umetolewa.

## **JE KUNA HATARI,MADHARA , AU USUMBUFU KUHUSIANA NA UTAFITI HUU?**

Hakutakuwa na hatari kwako wakati huu wa utafiti. Tutaweka kila kitu unachotwambia kama siri iwezekanavyo. Ikiwa kuna maswali ambayo hutaki kujibu, unaweza kuyaruka. Una haki ya kukataa mahojiano au maswali yoyote yaliyoulizwa wakati wa mahojiano.

## **JE! KUNA FAIDA ZUZOTE ZA KUJIHUSISHA NA UTAFITI HUU?**

Unaweza kufaidika kwa kupokea upimaji wa bure wa ukimwi kwa wale ambao hawajapimwa na wanaostahiki na wako tayari. Tutakuelekeza kwa hospitali yoyote kwa utunzaji na usaidizi inapohitajika. Pia, habari unayotoa itatusaidia kuelewa vizuri idadi ya wanawake wanaopata

kipimo ya kurejelea ya ukimwi katika ujauzito na baada ya kujifungua na kesi ya fursa zilizokosekana.

Hakuna zawadi yoyote ya kifedha itatunukiwa kwa kushiriki katika utafiti huu.

**JE, KUJIHUSISHA NA UTAFITI HUU KUNA GHARAMA YOYOTE KWAKO?**

Hapana. Hautakuwa na gharama. Ikiwa mtu atahitaji kupimwa virusi vya ukimwi , itakuwa bure katika kituo yoyote ya afya ya serikali.

**JE, KAMA UNA MASWALI KWA WAKATI UJAO?**

Ikiwa una maswali zaidi au wasiwasi juu ya kushiriki katika utafiti huu, tafadhali piga simu au tuma ujumbe wa maandishi kwa wafanyikazi wa utafiti kwa nambari iliyotolewa juu ya ukurasa huu.

Kwa habari zaidi juu ya haki yako kama mshiriki wa utafiti unaweza kuwasiliana na Katibu / Mwenyekiti, Kamati ya Maadili ya KNH-UON, nambari ya simu 2726300 Ext. 44102 barua pepe [uonknh\\_erc@uonbi.ac.ke](mailto:uonknh_erc@uonbi.ac.ke).

Wafanyikazi wa utafiti watakulipa fedha utakazotumia ikiwa simu ni ya mawasiliano yanayohusiana na utafiti huu.

**JE, KUNA UCHAGUZI MWINGINE?**

Uamuzi wako wa kushiriki katika utafiti ni wa hiari. Uko huru kukataa kushiriki katika UTAFITI na unaweza kujiondoa kwenye wakati wowote bila ukosefu wa haki au upotezaji wa faida yoyote.

## **IDHINI**

Je! Una maswali juu ya kitu chochote nilichosema ? Je! Kulikuwa na sehemu ambazo haukuelewa?

Je! Unakubali kushiriki katika utafiti?

Mshiriki (mama) anakubali kushiriki: Ndio Hapana

Mshiriki (mfanyikazi wa huduma ya afya) idhini yakurekodiwa: Ndio Hapana

Kama ndiyo:

Jina la mshiriki \_\_\_\_\_

### **Taarifa ya mtafiti**

Mimi, aliyetengwa, nimeelezea kikamilifu maelezo muhimu ya utafiti huu kwa mshiriki aliyetajwa hapo juu na ninaamini kuwa mshiriki ameelewa na kwa hiari na kwa hiari ridhaa yake amepeana idhini ya kuhusika kwa mahojiano yanayofuata.

Jina la mtafiti: \_\_\_\_\_ Tarehe: \_\_\_\_\_

Saini \_\_\_\_\_ Saa: \_\_\_\_\_

## **Appendix 4: STUDY QUESTIONNAIRE**

### **(a) MOTHERS**

1. Study Identification number\_

2. Age\_

3. Residence\_

4. Level of education (mark X where appropriate)

No formal education \_

Primary\_

Secondary\_

Tertiary\_

4. Marital status

(a)Married\_

(b)Single\_

(c)Separated/divorced\_

(d)Widowed\_

5. Employment

Salaried\_

Businesswoman\_

Housewife\_

6. Parity\_

7. Mode of delivery

SVD\_

C/S\_

8. during the last pregnancy:

Was the pregnancy planned? Yes\_ No\_

Time when attended 1<sup>st</sup>ANC (weeks/months) \_

No. Of ANC visits attended

(a) 1 (b) 2 (c) 3 (d) 4 (e) >4

At what gestation was the first HIV test done? (Weeks/months)\_

When was the next HIV test done? (Weeks/months)\_

Were you aware you needed a repeat test in labour/delivery and 6 weeks postpartum?

Yes\_

No\_

Was the testing done?

Yes\_

No\_

If NO, What was the reason?

(a) Not approached by HCW

(b) Not consented, due to:

Would you like a HIV test done at this time?

Yes\_

No\_

Number of sexual partners\_

Do you know the HIV status of your sexual partner/husband?

Yes\_

No\_

Did you test together during this pregnancy?

Yes\_

No\_

9. Do you feel safe in your current relationship?

Yes\_

No\_

10. Is anyone forcing you to do something sexual that you do not want to do?

Yes\_

No\_

**(b) HCW**

1. Study Identification number\_

2. Age

(a) <30 years\_

(b) 31-40 years\_

(c) 41-50 years\_

(d) >50 years\_

3. Gender (mark X where appropriate)

Male\_

Female\_

4. Job type

Healthcare provider\_

Managerial or administrative\_

5. Level of education

Certificate \_

Diploma\_

Bachelor's Degree\_

Master's Degree or higher\_

6. Have you received any training on HIV Testing services?

Yes\_

No\_

7. Which year did you last do the training? \_

8. What are the recommended time points for testing in ANC according to the current guidelines? \_

9. What are the core principles of HTS?

(a) Test all, no opt out, if positive immediately start on treatment

(b) Consent, confidentiality, counseling, correct results, connection/linkage to care

(c) Consent, counseling, correct results

(d) Consent, confidentiality, correct results

9. What is the protocol for HTS?

(a) Pretest counseling, HIV test, Posttest counseling, assess other conditions, referral and linkage to care

(b) HIV test and referral to care

(c) Pretest counseling, HIV test, Posttest counseling

(d) Pretest counseling, HIV test and Posttest counseling with risk reduction plan.

10. What is the approximate total testing time?



**Appendix 5: KEY INFORMANT INTERVIEW GUIDE**  
**Consent Process as in the form on appendix 3.**

*Thank you for agreeing to participate. We are very interested to hear your valuable opinion on how your attitudes and practices on the national guidelines on HIV testing in pregnancy and postpartum.*

- *The purpose of this study is to learn how health workers do their jobs and how they feel about the retesting guidelines. We hope to learn things that the Ministry of Health can use to improve working conditions and other factors that would improve health worker testing rates in the country.*
- *The information you give us is completely confidential, and we will not associate your name with anything you say in the focus group.*
- *We would like to tape the interview so that we can make sure to capture the thoughts, opinions, and ideas we hear from the group. No names will be attached and the tapes will be destroyed as soon as they are transcribed.*
- *You may refuse to answer any question or withdraw from the study at anytime.*
- *We understand how important it is that this information is kept private and confidential. We will ask participants to respect each others confidentiality.*
- *If you have any questions now or after you have completed the questionnaire, you can always contact a study team member like me.*

## **Introduction:**

### 1. Welcome

*Review the following:*

- Who we are and what we're trying to do
- What will be done with this information
- Why we asked you to participate

### 2. Explanation of the process

The phone interview will go on after your verbal consent. Ensure it's a schedule time where no distractions are anticipated. It will entail giving demographics and other details in the questionnaire and KII guide.

*Logistics*

- The interview will last about 30 minutes-1 hour

### 3. Ground Rules

Phone to have enough battery charge

Be in a quiet room free from distractions

### 4. Turn on Tape Recorder

### 5. Ask the interviewee if there are any questions before we get started, and address those questions.

*Interview begins, make sure to give the person time to think before answering the questions and don't move too quickly. Use the probes to make sure that all issues are addressed, but move on when you feel you are starting to hear repetitive information.*

**Questions:**

1. Let's start the discussion by talking about the current NASCOP guidelines on repeat HIV testing .What are they?
2. What is your take/feel on these guidelines?
3. How are we implementing these guidelines in our respective units?
4. What kind of support do you receive, if any, to be able to implement the guidelines?
5. What are some facilitators and barriers to the implementation of the guidelines that are a result of the facility or health care workers?

That concludes the interview. Thank you so much for sharing your thoughts and opinions with us.