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Evaluating the knowledge-adherence of couples' voluntary HIV counseling and testing counselors: implications for patient management in Lusaka, Copperbelt and Southern Province, Zambia

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By

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Bachelor of Arts
University of South Florida
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Thesis Committee Chairs:

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An abstract of
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Abstract

Evaluating the knowledge-adherence of couples' voluntary HIV counseling and testing counselors: implications for patient management in Lusaka, Copperbelt and Southern Province, Zambia

By Ana Maria Visoiu-Knapp

Objective: To evaluate knowledge adherence at the nurse counselor level in government clinics in Lusaka, Copperbelt and Southern Province, Zambia.

Design: Analysis of knowledge, attitudes and practices regarding Couples' Voluntary HIV Counseling and Testing (CVCT) standard operating procedures (SOPs) among CVCT nurse counselors was conducted on results yielded by cross-sectional quantitative surveys.

Methods: Using content and thematic analyses of 23 qualitative interviews and semi-structured observations, a quantitative survey was developed, piloted and administered to 71 nurse counselors. Descriptive statistics (counts and percentages for categorical variables; means and standard deviations for continuous variables) were calculated for survey results stratified by geographic region. Post hoc bivariate analyses were conducted on survey variables.

Results: 71 surveys were administered to government clinic CVCT nurse counselors in Lusaka, Copperbelt and Southern Province. Survey questions pertained to resources and trainings, CVCT service delivery and follow-up, performance-based incentives, and the integration of Long Acting Reversible Contraceptive methods (LARC) and CVCT in Under-5 and Family Planning clinics. **Knowledge-adherence findings:** Most Knowledge, Attitudes and Practice (KAP) variables did not predict adherence (i.e. though counselors report flip charts to be useful, most did not use them consistently)**. Knowledge of incentive scheme**: Despite ZEHRP emphasis on performance-based incentive scheme, counselors exhibited low knowledge about monthly performance measurement metrics**.** Only 35% of counselors knew that changes to the performance-based incentive scheme occur on a monthly basis; knowledge about purpose of monthly changes was below 60%. Knowledge of CVCT follow-up referrals for discordant couples was only 79%. **Regional differences:** low use of refresher trainings and low appreciation of incentive scheme in Copperbelt Province.

Conclusion: Provider-level adherence to SOPs designed to improve client management, increase client retention and decrease barriers to follow-up needs to undergo a process of continuous quality improvement. Regional differences are important to understand when identifying and addressing counselor knowledge-adherence issues.

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Introduction

Each year in Sub-Saharan Africa, three to four million new HIV infections occur, making this region of the world the epicenter of the HIV epidemic [1]. In 2010, 70% of new HIV infections and half of the deaths resulting from comorbidities of HIV/AIDS occurred in Sub-Saharan Africa [2]. Social and economic consequences of HIV are similarly grave with more than 60 % of US bilateral foreign assistance in health appropriated to HIV/AIDS in 2011. With such devastating statistics and given the high burden of HIV in this region, efficiency in prevention and treatment services is a highly regarded yet similarly debated topic with various frameworks and constructs addressing different contexts within international settings.

Zambia, with 14 % of its population testing positive for HIV, is the country with the sixth highest HIV prevalence in the world [3] [4]. Urban areas in Zambia such as the capital, Lusaka have HIV prevalence nearly twice as high than in rural areas. Three main areas in Zambia are largely afflicted with HIV: Lusaka (22% prevalence), Copperbelt Province (20% prevalence) and Southern Province (18% prevalence) [5]. As is true across Sub-Saharan Africa, heterosexual intercourse is the predominant route of HIV transmission in Zambia. More than three quarters of Africans aged 19-49 years old form cohabiting unions and of those HIV positive individuals in a cohabiting union, half have HIV negative partners [6]. The Rwanda Zambia HIV Research Group (RZHRG) have pioneered Couples Voluntary Counseling and Testing (CVCT), a highly effective method which tests the HIV status of couples and provides comprehensive health counseling and care through various integrated approaches to family planning, nutritional and clinical services aimed at reducing co-morbidities and mortality rates [7]. RZHRG revealed that counseling discordant couples together not only reduces HIV transmission by two-thirds [8] but also has successful behavior change implications with more than 80% reported condom use

compared to less than 3% reported condom use prior to CVCT [7]. CVCT has also shown a reduction in reported outside partners and an increase in use of family planning in instances where contraception is offered [7]. Wall et al (2013) found that long-acting reversible contraceptive (LARC) methods were effective measures within the context of HIV prevention and family planning services in users determined to avoid unplanned, unintended pregnancies [9].

The social ecological model of health infers that individual health status and health behaviors are influenced by an expansive array of factors operating at the *macro, meso* and *micro* levels of society [10] and encompass political, economic, social, cultural, institutional and individual determinants of health. Roughly 64 % of Zambia's population lives on less than $1/ day [11]. Studies have shown that in addition to context-infused interpersonal and socio-environmental determinants of health, economic wealth has been shown to be a significant predictor for HIV serostatus in Sub-Saharan Africa [12].

In a context where health clinics are stationed across vast distances leaving rural community members no choice but to walk for kilometers on end until they can reach health services, it is no surprise that human and material resources are scarce with 1 doctor to 14,000 people and limited treatment available for curable diseases [13]. Perhaps one of the greatest challenges facing the healthcare infrastructure sector in Zambia is ensuring that health care providers have access to necessary recurrent trainings in order to optimize efficiency and improve standards of care. Furthermore, despite the implementation of various integrated approaches to health in addressing the HIV epidemic in Zambia, loss to follow-up (LFU) post initial CVCT visit is exceedingly high in government clinics, where unlike in research projects, transport reimbursements are not provided. Several efforts including combination prevention

strategies have been made to improve client retention and linkage to care in HIV prevention and treatment programs, but even with provision of antiretrovirals, LFU in one study of 30,000 patients showed more than half were no longer attending one year after initiating treatment [14]. Follow-up in the area of CVCT has been limited and social behavioral research in Africa has primarily addressed the LFU problem through the perspective of clients.

This study serves as formative programmatic research aimed at identifying perceived provider barriers to client management and follow-up based on knowledge adherence at the level of each counselor. This research aims to explore provider knowledge, attitudes and practices around CVCT and Couples' Family Planning Counseling (CFPC) including Long-Acting Reversible Contraceptives (LARC) and referral services including male circumcision for HIV negative males. Referral systems provide ancillary health resources alongside CVCT services and are an important component of efficiency in service integration, potential decrease in stigma and increased client follow-up rates [15]. Furthermore, referral systems and associated accurate record keeping may track client trends and behaviors in seeking services. Male circumcision referrals are a critical aspect of HIV prevention. Male circumcision is known to reduce transmission of HIV by between 50% and 60% [16]. Further, this study aims to better understand programmatic, logistical, physical and social complications surrounding service delivery with follow-up. Provider incentives will also be explored to determine the impact of performance-based incentives on provider motivation to follow protocols and improve client retention.

Literature Review

Zambia Sociopolitical Context

Zambia's peaceful transition to independence from British rule was established in 1964 [17]. In effort to bring one of Zambia's most thriving enterprises under government ownership and management, Kenneth Kaunda, the leader of the independence movement and Zambia's first president, introduced municipal policies across economic sectors, including the copper mines. This act of nationalization caused copper prices to plummet, henceforth the economy experienced a major downturn. It wasn't until the 1990's that there was a resurgence in copper prices as result of the privatization of the mining sector, bringing Zambia to experience newfound economic growth. The introduction of a multi-party system in 1991 allowed for a change of leadership; since then, Zambia has publicly elected five presidents [17].

The landlocked country in the south-central part of the African continent is surrounded by war-torn nations, and while Zambia itself has maintained political stability, poverty is nevertheless ubiquitous. Sixty-four percent of Zambians live on less than one dollar per day, while nearly half of the population does not have access to potable water [11]. Life expectancy at birth is among the lowest in the world, with 49 years for men and 53 years for women [18].

Zambia HIV Statistics

Zambians are faced with a surge of communicable and non-communicable diseases. Zambia has the sixth highest HIV prevalence in the world, with 14% of the population infected [4]. In 2009, roughly 980,000 prevalent cases and 76,000 incident cases occurred in Zambia alone [19, 20]. The highest HIV incidence rates occur among cohabiting couples, and since 75 % of Africans are in a cohabiting union, ensuring that adults know the HIV status of their partner

significantly reduces the risk of seroconversion [19]. It is estimated that in marriage, 45% to 75% of HIV negative individuals have HIV positive partners [21], and the infection is increasingly feminized, with women bearing a heavier burden than men [22]. In Zambia, rural areas experience an HIV prevalence of less than 10%; this is half of the HIV burden in urban areas where prevalence is at 20% [19, 23]. In the capital, Lusaka, roughly 17% of pregnant couples yielded discordant results (where one partner is HIV+ and another partner is HIV-) [24]. Well over half of new HIV infections occur in cohabiting heterosexual couples [6].

Cohabiting couples represent the highest HIV risk group [6]. In Zambia, it is estimated that 79% of new HIV infections are acquired in stable relationships where the HIV positive partner is likely unaware of their HIV infection status. The distribution of seroconversions in marriage stratified by gender suggests that 75 % of seroconversions occur in men while 84 % of seroconversions occur in women [6, 21, 25]. Across Africa, it was estimated that 99 % of HIV infection was acquired through unsafe sexual intercourse. Comprehensive prevention efforts are necessary to decrease incidence of HIV transmission in discordant couples who are at very high HIV risk.

Zambia Fertility Statistics

Zambia is geographically located in the central part of Sub-Saharan Africa, an area that collectively experiences an annual population growth of 2.5% [26]. The current birth rate in this region was reported to be 5.1 births per woman in 2010 and DHS estimates between 10-65% of all pregnancies in the region to be unintended and unplanned [9, 27]. Year 2013 estimates indicate that Zambia in particular has a total fertility rate (TFR) of 5.81 children born per woman, the seventh highest fertility rate in the world [18]. Such unsustainably high TFRs are associated with stifled economic and social development [9]. Adding to socioeconomic

challenges of rapid population growth, is the estimated more than 33 million people living with HIV in Africa [22] who, as a result, also experience associated opportunistic infirmities with HIV and antiretroviral treatments for HIV [28].

In developing countries, challenges with uncontrolled fertility rates weighing down social capital while thrusting low-income families deeper into the poverty trap, naturally lead to concern over supply and demand. Alongside challenges with adherence to contraception [9], great difficulty is contributed by infrastructural and economic barriers leading to interruptions in the supply chain of contraceptives, particularly those that act as short-term methods [9]. Despite routine contraceptive counseling visits to clinics, some HIV prevention studies in sub-Saharan Africa have reported annual 64/100 PY pregnancy rates [9, 29-31]. Long-acting reversible contraceptive (LARC) methods such as contraceptive implants (offering up to 3-5 years of protection) and copper IUDs (providing up to 12 years of protection) are ideal methods in low-resource countries where transportation and supply chain issues are barriers to routine clinic visits and therefore daily adherence [9, 32-35].

Despite a significant increase in contraceptive use among women in developing countries since the 1960s, it is estimated that 1 in 6 married women want to either postpone having children or prevent pregnancy altogether ,yet they are not accessing any method of contraception [36, 37]. This unmet need for family planning in developing countries threatens the social, economic and education status of families and women in particular. Each year, unintended pregnancies are estimated to occur among 76 million women in developing countries [36, 38]. Unmet need for modern contraception methods in developing countries contribute to the yearly estimated 19 million unsafe abortions leading to maternal morbidity and mortality[36, 39].

An analysis on maternal health in limited-resource countries determined family planning a cost-effective and reasonably achievable standard of health against maternal mortality in reaching the fifth Millennium Development Goal [36, 40]. Studies have shown a correlation between an increase in contraceptive use and a decrease in maternal mortality [36]. By increasing availability, accessibility, and affordability of modern contraceptives to women, roughly one quarter to one-third of all maternal deaths can be averted, translating to approximately 150,000 lives saved each year [36, 38, 41]. Over the past two decades, developing countries with relatively high contraceptive use have seen an estimated 40% decrease in annual maternal deaths [42].

Furthermore, widespread availability of family planning in sub-Saharan Africa, particularly more reliable and cost-effective long-term methods [9] will significantly reduce the number of children born with HIV. One sub-Saharan African study estimated that family planning methods prevent 29% more children born with HIV when comparing investments in antiretroviral drugs offered to HIV positive mothers in prevention of mother-to-child transmission programs [36, 43]. Nevertheless, despite a plethora of research supporting the great need to prioritize family planning at the forefront of economic, political and health agendas, national and international aid in countries such as Zambia has shifted priorities. As poverty and the AIDS epidemic persist with full force, vertical programs disregarded family planning as a subsidiary challenge needing to be addressed in combating HIV/AIDS [36, 44, 45].

Other Comorbidities and Health Infrastructure Challenges

Comorbidities threaten stability of the health infrastructure while dramatically reducing the lifespan of co-infected individuals [28]. As a result of funding, staffing, and training

limitations, health care infrastructures in sub-Saharan Africa are faced with shortages in diagnostic, treatment, and prevention tools. Simultaneously, morbidity and mortality rates exceed the fragile capacity of hospitals and clinics to extend health services to those who need it most [46]. Inequities in availability, accessibility and affordability of services additionally stem from "poor procurement and distribution systems" [47].

Africans are further confronted with non-communicable conditions such as cardiovascular diseases, diabetes and hypertension increasingly imposing extra burdens on many countries' ability to cope with existing communicable diseases [47, 48]. The synergism of infectious and chronic diseases perpetuates a vicious cycle of decreased productivity and debilitating effects on the health infrastructure ill-equipped to address the growing burden of disease [49].

Zambia-Emory HIV Research Project

In Zambia, the Zambia-Emory HIV Research Project (ZEHRP) branch of the Rwanda Zambia HIV Research Group (RZHRG) has implemented highly impactful and culturally sensitive evidence-based programs and strategies to integrate health services aimed at reducing both communicable and chronic diseases concurrent with HIV.

RZHRG's flagship program is Couples HIV Voluntary Counseling and Testing (CVCT). This joint testing and counseling of couples is aimed at increasing couples' knowledge about methods of preventing HIV transmission, unplanned pregnancies and reducing the risk of mother-to-child infection, as well as optimizing comprehensive health care around prevention of intestinal worms, hypertension and malaria among other common morbidities in Zambia. For discordant couples, this education is invaluable for preventing transmission to the HIV negative

partner. Prior to CVCT, discordant couples reported less than 3 % condom use compared to disclosure of more than 80 % condom use following CVCT, indicating that behavior change is a successful outcome of CVCT [7].

ZEHRP's Good Health Package (GHP) incentive program is currently being implemented in 70 ZEHRP-affiliated government clinics in Lusaka, Southern and Copperbelt provinces [50]to enhance monitoring of HIV patients by improving rates of follow-up clinical visits. Client retention is critically significant especially for discordant couples who are at high risk for HIV. The comprehensive GHP package includes the following prevention, diagnosis and treatment for communicable and non-communicable diseases including intestinal worms, schistosomiasis, hypertension, and diabetes along with hygiene and sanitation aids and (when available) insecticide treated bed nets. This cost effective GHP has contributed to increased follow-up among HIV discordant and concordant negative couples [51]. Nevertheless, rates of high risk couples returning for clinic follow-up is relatively low, thus an extremely important area for research presents itself.

A DFID grant awarded in March 2013 has allowed the integration of couples' family planning counselling (CFPC) and Long-Acting Reversible Contraceptive (LARC) services with CVCT in streamlining health services alongside the Good Health Package [52].This integration is critical as women clients and providers consistently voice the importance of male involvement in family planning and HIV counseling and testing, and as most new infections are acquired in stable relationships where partners are likely unaware of their HIV status. Family planning efforts are critical in the shift towards improving overall health and social capital of women among decreasing maternal and child mortality, reducing unsafe abortion practices and increasing opportunities for education and basic human rights to determine number of offspring

and practice proper spacing of children [9, 53-58]. Male involvement and therefore couples' family planning has been indicated by women to play a critical role in preference of contraceptive method, continued utilization, and sustained habits of condom use [9, 59-61]. Such services as HIV Counseling and Testing, Family Planning and Male Circumcision are being offered to clients on an individual basis. Ensuring that these services are jointly offered to couples has shown heightened success rates in uptake, HIV prevention practices, sustained use of contraception methods and an overall improvement in health outcomes as couples enter into a reciprocal support system.

Contraceptive methods are estimated to be responsible for averting two-fifths of maternal deaths linked to unintended pregnancy [9, 56]. Long-term reversible contraceptive methods are highly effective and reliable compared to short-acting methods highly affected by user inconsistency in daily or quarterly adherence to such methods as oral contraceptive pills (OCPs) and injectables [9, 62, 63]. In countries where HIV is rampant, introducing CFPC and LARC methods into the primary health care system is critical to increasing knowledge and acceptability of contraceptive methods among males, improving method uptake while strengthening family planning sustainability efforts of healthcare infrastructures [58]. With LARC methods such as contraceptive implants effective for 3-5 years and the copper IUD effective for 12 years, health infrastructures in developing countries will be less susceptible to supply chain interruptions and economic barriers to serving the large flow of frequent repeat clients requesting short-term methods [9]. Notwithstanding that access to short-term methods is high compared to extreme underutilization of cost-effective LARC methods [9], routine adherence to short-acting contraceptives is low with many unintended pregnancies still occurring [9].

The World Health Organization has endorsed couples' HIV counseling and testing as a reasonably achievable standard of care. The development of the Centers for Disease Control and Prevention (CDC) supported *Couples HIV Counseling and Testing Intervention and Training Curriculum* in 2007 in collaboration with the National Institute of Health (NIH), Zambia-Emory HIV Research Project (ZEHRP), and the Liverpool School of Tropical Medicine is an outward recognition of the critical significance of CVCT [64, 65]. The Zambian Ministry of Health sanctioned the CVCT training curriculum in 2008 [64]. In Zambia, more than 150,000 couples have received joint counseling and testing, making Zambia along with Rwanda (where CVCT is a national standard of care) model countries for the implementation and execution of CVCT [66].

Couples' HIV counseling, testing and family planning services, in combination with the Good Health Package reduces service gaps by offering highly cost-effective and sustainable comprehensive health services. Previous research has indicated that the impact of CVCT is unprecedented, with two-thirds reduction of HIV transmission in discordant couples [8], and decreased rates in unplanned pregnancies and sexually transmitted infections. Through couples' testing and counseling, an estimated more than 45 % of infections in married couples are averted [6].

In urban and rural parts of Zambia, where HIV prevalence is high especially among individuals of reproductive age, 23.1% in urban areas and 10.8% in rural areas [9, 67], the integration of CFPC and CVCT is essential for couples' decision making vital to maternal and child health, social capital and family education status.

Despite these efforts in Lusaka, Southern and Copperbelt provinces, client follow-up rates remain low. Many studies have looked at barriers to clinic follow-up visits from the perspective of the clients, but few have examined challenges to client retention and follow-up

from the providers' perspective. Client-based studies examining barriers to retention in HIV care report limited accessibility and affordability of transportation to clinics [68], unaffordability of out-of-pocket service costs, reliability on other perceived curative methods, stigmatization and knowledge barriers including misunderstanding related to treatment, despite increased availability of HIV treatment services [69].

Client-level Barriers to HIV Care

A study examining barriers to HIV care in South Africa identified stigma as a considerable barrier from the perspective of clients and providers, citing issues such as fear of discrimination by employers and other community members [70]. Clients further mentioned clinic related barriers to care such as long waiting periods and inconvenient hours of operations, unprofessional clinic staff, and inadequate appointment scheduling systems. Conversely, providers cited stigma mitigation and serostatus disclosure as the responsibility of the client and similarly did not recognize the full extent of client dissatisfaction with the aforementioned barriers to HIV care [70].

Another study conducted in Malawi used concept mapping to explore factors associated with client loss to follow-up (LFU) in HIV treatment programs [71]. Cluster mapping session participants included both clients and providers from which the following clusters were generated based on brainstormed and rated items regarding LFU: inconsistent, inaccurate data recording or non-recording of patient health status, clinic visits etc. and difficulty with client tracing as a result of invalid phone numbers, unpredictable access of services across clinics and client residing outside of catchment areas, along with lack of clinic transport dedicated to tracing clients [71]. Social and financial support issues such as having to care for other sick relatives,

inability to afford food in addition to issues with health worker attitudes, confidentiality, inefficient and ineffective provider-client communication were additional themes generated from cluster mapping sessions [71]. Clients reported the following regarding factors of LFU: anxiety about returning to clinics upon too many missed appointments, lack of space and privacy at clinics, and fear of being ostracized, while providers indicated issues such as understaffed clinics and inadequate trainings offered to health workers [71]. Supply-chain issues with ART, belief in traditional medicine and the power of prayer prevailing over the effectiveness of ARVs were listed as additional factors associated with LFU [71]. Further, lack of knowledge and acceptance is another major barrier to client retention and leads to a host of life-threatening behaviors and attitudes such as failure to disclose HIV status to new partners, misconceptions about ART regarding effects on unborn children, as well as unwillingness to routinely adhere to ART in effort to maintain normalcy in daily activities [71].

Provider-level Barriers to HIV Care

Examining provider-perceived barriers to client retention could present a potentially critically significant research area if discovered that trainings and personal motivation of providers, among other incentives, are core drivers of effective service delivery influencing client retention.

Studies have shown that pre-and post-test assessments administered to providers are critical tools to ensure efficacy of trainings, quality services and to determine circumstances necessitating refresher training [64]. Despite the recognition of CVCT as a reasonably achievable standard of care in Zambia, operational challenges exist with implementation and CVCT program expansion [64]. As is the case in many African countries, Zambia experiences a

shortage in health care providers, forcing a reliance on non-medical staff or "lay counselors" to deliver highly specialized prevention and support services to couples [64]. This task-shifting inevitably gives rise to issues regarding differences in educational levels, HIV knowledge and perhaps introduces bias of traditional customs and behaviors at the provider level. For instance, within the context of LARC, a lay counselor who has never had an IUD or an implant, may be reluctant to offer and strongly recommend these highly effective long-term methods to her community as she may lack knowledge regarding health benefits. As a result, counselors who lack awareness and adequate training may not be intrinsically motivated to effectively communicate educational information regarding side effects and benefits of family planning and thus may not reach the client with this critical information [72].

Previous studies that have looked at provider barriers within the context of HIV have identified three core variables for why providers do not follow standard practice in HIV service delivery: *knowledge, attitudes and behavior* [73]. "Lack of familiarity or awareness of clinical recommendations" constituted knowledge barriers, detachment from guidelines or non-agreement represented attitude barriers, while "external barriers related to the guidelines themselves, to patients, or to environmental factors" comprised behavioral barriers [73]. Studies that have investigated provider barriers to screening for sexually transmitted infections among HIV-infected men who have sex with men (MSM) reported obstacles such as "time constraints", "language and cultural barriers" and concerns regarding patient confidentiality [74]. In the Democratic Republic of Congo, studies involving youth living with HIV/AIDS have looked at barriers to provider-delivered sexual behavior counseling for prevention of HIV transmission [75]. Findings substantiate lack of knowledge among providers as a critical barrier along with provider comfort level to discuss sex with youth as a result of cultural and religious beliefs.

These issues paired with a general lack of assurance regarding legal implications involving contraceptive use among youth posed moral barriers to effective provider delivery of prevention counseling for HIV transmission [75].

A study of sensitivity training for providers of MSM in Kenya points at the dangers surrounding lack of awareness regarding important rising health issues among healthcare workers. This knowledge gap, rooted in old traditions and infused with unsubstantiated convictions perpetuates personal stigma and barriers to adequate delivery of key health services. Findings from this study indicate that intensified focus needs to target provider trainings aimed at increasing accurate knowledge and corroborate the importance of extirpating personal prejudices in order to deliver optimal, life-saving services [76].

Lack of accurate knowledge regarding HIV prevention practices and treatment among providers could stifle client adherence to protective procedures and behaviors as well as pose structural barriers to compliance with optimal treatment regimens [77]. When clients are asked about perceived clinical barriers to follow-up, reported challenges include “negative provider interactions, lack of familiarity with clients’ medical situation and overcrowding” [78].

In a case study involving ten research centers affiliated with the International AIDS Vaccine Initiative (IAVI) in Eastern and Southern Africa, a mixed methods approach was used to evaluate services provided. Predominant service gaps were identified, along with characteristics of service recipients, “referral systems, and barriers to referral uptake” [79]. These data informed the development of standards of care for HIV prevention across the ten research centers [79]. Services found to be consistently provided included the following: “HIV risk reduction and family planning counseling (FP), male condoms, management of sexually transmitted infections,

CD-4 counts, and general medical care to volunteers and non-research volunteers" [79]. Among erratic services, adult male circumcision (AMC) and female condoms were less frequently provided. And even among family planning options, intrauterine devices and implants were scarce options for clients [79].

Although ART, AMC and FP are among established referral systems, few guidelines exist on comprehensive referrals, while psychosocial services are rarely an option [79]. Barriers to referral uptake included service gaps and poor services associated with some referral points, cost of services (as few research centers cover costs of services outside of scope of research) and transportation [79].

Efficient referral systems, provider trainings and context-appropriate testing algorithms have been identified as key characteristics of effective HIV counseling and testing services [80]. In developing country settings, "geographic, financial and cultural" factors pose challenges to referral services [81]. A case study conducted among Zambian primary healthcare workers tending to clients with neurologic disorders identified lack of training among providers and an inadequate physician referral system as barriers to quality of care [81].

HIV prevention impact is a major outcome of referral uptake. ART referrals for HIV positive individuals in discordant relationships are critical in reducing viral load and preventing HIV transmission to negative partners [82]. Family planning referrals for HIV positive women contributes to prevention of unintended pregnancy and mother-to-child transmission of HIV, alongside improved antenatal and postnatal maternal and infant health [83]. Another highly effective strategy in HIV prevention is male circumcision referrals for HIV negative males. In a randomized trial conducted in rural Uganda, circumcised men experienced a lower HIV

incidence rate than uncircumcised men regardless of similar behavior patterns with respect to condom use [84].

In addition to improving referral services to clients, pay-for-performance schemes have also sparked interest among researchers interested in reaching Millennium Development Goals in developing countries. A qualitative study investigating the impact of pay-for-performance on behavior change among providers in Tanzania revealed that although pay-for-performance systems contribute to behavior change, implementation of such a system should give careful consideration to local contexts, sustainable resources to support pay-for-performance systems and challenges of counter-productive work behaviors [85]. This study revealed that in a low resource setting, providers may resort to coercive measures in order to attain standards eligible for rewards. Health outcomes may suffer as a result of misinformation to clients, false reporting in clinic log books and provider neglect of additional tasks essential for quality healthcare [85-88]. Considering vast disparities across services in low-income contexts, issues of service gaps and inconsistencies across healthcare delivery prove challenging for health outcomes. Studies have determined factors such as low productivity [85, 89], job dissatisfaction leading to demotivation [90], and sporadic attention to clinical guidelines [91] characteristic challenges of health systems in poor resource settings. Pay-for-performance schemes among health providers have shown to lead to improved care across all demographics [92], nevertheless, context should be carefully considered and such incentive schemes should be tailored accordingly [85].

HIV care and treatment programs have long experienced high rates of loss to follow-up among clients [93]. In Rwanda, a study analyzing data collected on HIV-infected individuals enrolled in 41 healthcare facilities found that greater efforts are necessary towards client retention in care before initiating ART treatment and while healthy [93]. A retrospective cohort

study conducted in Central Mozambique evaluated linkage to HIV care and antiretroviral therapy and found abysmal efforts across services, particularly related to loss to follow-up among women referred for treatment from prevention of mother-to-child transmission (PMTCT) as opposed to voluntary counseling and testing (VCT) [94]. Factors showing improved rates in HIV client retention in Sub-Saharan Africa include service integration, counselling support, and food and clinical incentives [95]. Perhaps a more specialized approach to efficiency in service provision could lead to improved overall health outcomes.

Furthermore, a CDC study of six African countries, including Zambia, examined distinctions between men and women infected with HIV and their antiretroviral therapy outcomes and found that men are much more likely than women to delay ART initiation. Similarly, the attrition rate was 15-26% lower among women [96]. Alongside intensified prevention strategies such as couples' HIV counseling and testing [8], identifying and addressing context-specific causes of gender disparities in HIV treatment outcomes may contribute to decreased HIV transmission rates in female partners [96]. A study examining outcomes of ART programmes in rural Lesotho showed that for men initiating ART in health centres as opposed to hospitals, retention in care was more probable as loss to follow-up was lower [97].

Client satisfaction and provider-experienced challenges with service delivery were explored via "a facility-based cross-sectional study" in Adama town, Ethiopia [98]. The study assessed satisfaction of 423 pregnant women via a UNAIDS- adapted best practices questionnaire and conducted interviews with 31 healthcare providers in eight health facilities. Results indicated that client satisfaction with PMTCT services was high (74.7%), although only 39% of pregnant women returning for ANC follow-up stated that they understood health messages related to HIV mother-to-child transmission [98]. Interviews with service providers

revealed challenges regarding inadequate or insufficient training, utter absence of evaluation regarding performance and dissatisfaction with monetary compensation [98]. Specialized efforts need to be dedicated towards improving communication between clients and providers alongside devising motivation schemes aimed at addressing provider performance [98].

Provider performance is a major outcome of refresher trainings. Routine refresher trainings have been identified as critical predictors of provider attitudes, knowledge and behaviors as these trainings offer a continuous support-based supervisory system. Although the literature presents many diverse approaches to refresher trainings related to duration, location, structure, depth and training approaches across organizations, "competence- and practice-based" trainings are considered the gold-standard in reinforcing knowledge and skills for providers [99]. Done correctly and routinely within the appropriate work context of providers or community health workers, refresher trainings have been found to be more critical than the initial selection of providers [99]. Refresher trainings additionally offer opportunities for providers to voice challenges and call attention to supply-chain interruptions, material and human resources as well as relay important information for context-appropriate programmatic improvements.

An evaluation study looking at impact of a two-day refresher training workshop on knowledge and skills improvement of 25 lay counsellors in Chongwe District, Zambia, found dramatic increases in pre- and post-training test scores on didactic and practicum assessments of HIV counseling and testing practices [100]. Lay counselors showed a 20% increase in test scores on knowledge about HIV ($p<0.001$), highlighting the importance of refresher trainings for tracking progress and correcting violations of safety standards in the routine work performance of lay counselors [100]. Another study looking at lay counselor influence on client antiretroviral treatment adherence revealed that post a 35 hour refresher training coupled with supervision,

improved quality of counselor-client communication lead to increased overall service delivery for client behavior change [101]. Refresher trainings are an integral component of retaining skills and knowledge of providers towards effective practice of service delivery and improved client retention.

Methods

Ethical Considerations

Survey participants were trained Couples' Voluntary HIV Counseling and Testing (CVCT) nurse counselors employed by the Zambia-Emory HIV Research Project (ZEHRP). All participants were over the age of 18, were administered informed consent, and were reimbursed for their participation (*20 Kwacha, the equivalent of 4 USD*).

All ZEHRP student projects are covered under existing Emory IRB approved protocols. The student researcher was added as an investigator on Emory IRB# 357-2004 protocol and only utilized materials approved by Emory University IRB and University of Zambia Research Ethics Committee. In Lusaka, the human research protection assurance number of ZEHRP's IRB from The University of Zambia Research Ethics Committee is FWA00012685.

The student researcher completed RZHRG mandated CITI trainings in Biomedical Research, Social/ Behavioral Human Subjects and Good Clinical Practices. Prior to field experience, all RZHRG student researchers read and completed quizzes on RZHRG's standard operating procedures.

Participant Recruitment

Study participants were nurse counselors in Zambian government clinics trained by ZEHRP to deliver CVCT. Nurse counselors included part time and full time counselors trained as: lay counselors, program managers, monitoring and evaluation (M&E) counselors, and laboratory technicians. All counselors have received the ZEHRP Psychosocial Counseling Training.

ZEHRP counselor participants were recruited from 32 of 75 government clinics within 3 Provinces in Zambia: Lusaka, Copperbelt and Southern Province. With the exception of Lusaka

(from which all ZEHRP clinics were selected), selection was based on convenience factors such as clinic reachability and whether or not respective clinics were in-route other ZEHRP related activities. Counselors were recruited from 5 clinics in Lusaka, 21 clinics in Copperbelt Province, and 6 clinics in Southern Province. ZEHRP supported services provided at these clinics include CVCT, Family Planning (FP), provision of a Good Health Package (GHP), including prevention, diagnosis, and treatment for common communicable and non-communicable diseases available to concordant negative and discordant couples at follow-up.

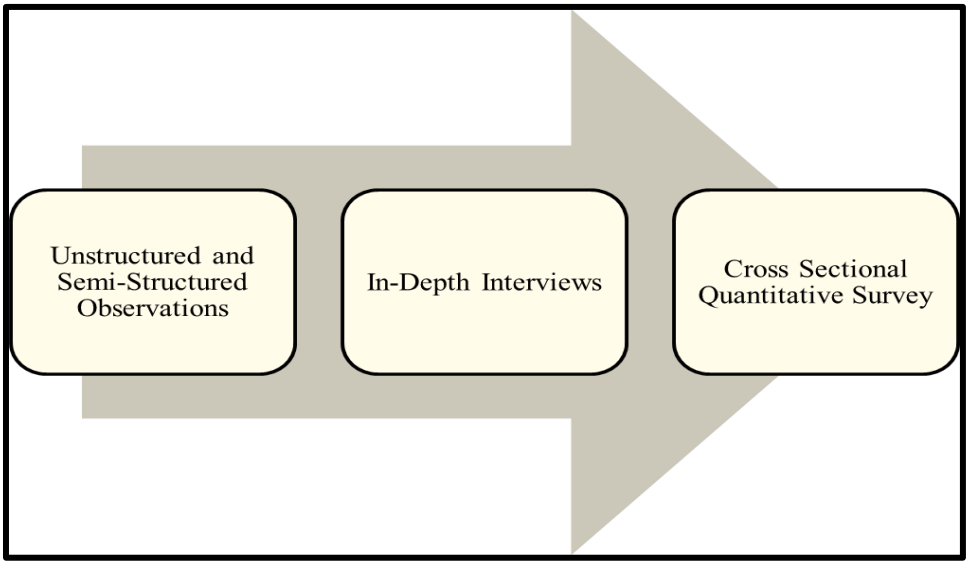
CVCT nurse counselors with a range of ZEHRP trainings and government clinic work experience were selected to participate based on convenience and availability during weekend and/or weekday CVCT clinic activities or during ZEHRP refresher trainings. Thus, participant selection within the clinics was highly dependent on availability and convenience.

Accompanied by a senior ZEHRP counselor, formal introductions were made to the Sister-in-Charge and CVCT nurse counselors at each clinic upon which permission to make observations in the clinic was obtained. A consistent presence during CVCT clinic activities was established to build rapport with key personnel and clinic staff. Clinic needs were respected first and foremost with considerations for privacy, time and space of both staff and clients.

Upon establishing a consistent presence conducting observations during CVCT clinic activities, inquiries about CVCT nurse counselor interest to participate in in-depth interviews (IDI) and quantitative surveys were made during appropriate times at the clinics and did not interfere with clinic activities (See *Figure 1* for methodological flow). Upon verbal agreement to participate, specific days/times for interviews or surveys were arranged. ZEHRP interns assisted

with phone call reminders to CVCT nurse counselors about meeting IDI and/or survey appointments.

Figure 1: Flow of study procedures towards survey development



Where feasible, a formal Letter of Request (LOR) was personally delivered by the student researcher to the Sister-in-Charge at each clinic where observations, interviews and surveys were conducted *(see Appendix)*. The LOR included the purpose and time frame for the study, the design methods associated with the study, information about confidentiality, and student researcher contact information for all further inquiries. The student researcher was available to answer any questions in person.

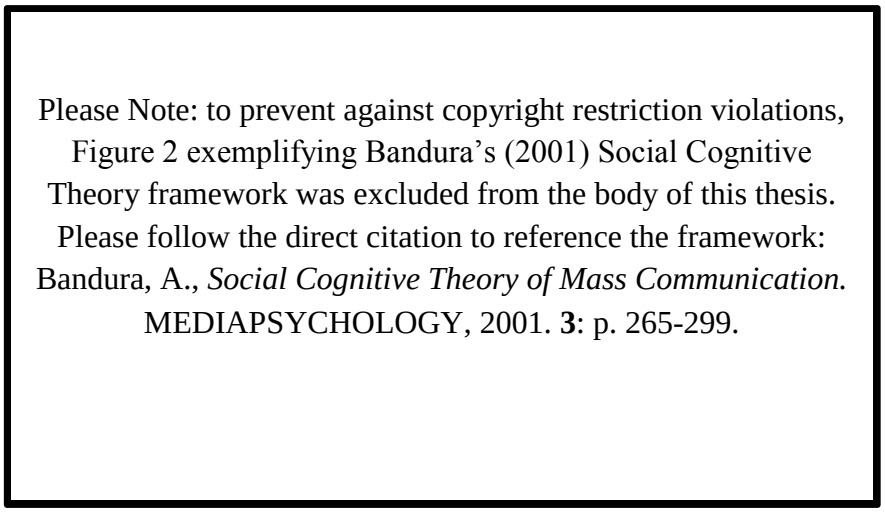
Study Design

A cross-sectional, quantitative survey was conducted to evaluate knowledge, attitudes and practices regarding CVCT standard operating procedures among ZEHRP-trained CVCT nurse counselors in government clinics in Lusaka, Copperbelt and Southern Province, Zambia. Survey development was guided by Social Cognitive Theory in addition to formative research:

unstructured and semi-structured observations and IDIs. Social Cognitive Theory is a behavioral model which provides a conceptual framework suitable for examining "determinants and psychosocial mechanisms" of communication as it influences individual thought and action for desired change [102]. Factors thought to influence human behavior are internal disposition and the environment [102]. Social systems are the source of behavior change, human adaptation and self-guidance. Figure 2 illustrates a conceptual framework of the Social Cognitive Theory. The projected theory guided the assessment of CVCT and CFPC provider attitudes and beliefs shaped by environmental (external) and intrinsic (internal) dynamics. External factors evaluated inputs from comprehensive ZEHRP trainings, resources and services while internal factors assessed counselor motivation, satisfaction and knowledge related to the aforementioned ZEHRP inputs.

In the Social Cognitive Theory schematic that follows, personal, behavioral and environmental determinants are interconnected factors guiding human comprehension, self-reflection and action. Personal cognitions partly influence which environmental factors to attribute most significance, internalize and use as motivational factors. These symbolic communications serve to guide decision-making and action [102].

Figure 2: Social Cognitive Theory (Bandura, 2001)



Observations

A situational assessment was initiated by means of unstructured and semi-structured, direct non-participant observations during weekend and, where available, weekday CVCT clinic activities. Prior to clinic visitations in Lusaka, Coppebelt and Southern Province, a review of all relevant protocols and standard operating procedures associated with each group, pre- and post-test counseling tool was conducted. This process strengthened understanding of the necessary procedural progression of CVCT service delivery based on the following clearly defined standards: length of time necessary for appropriate administration of services, guided presentation of flip chart materials, and required amount of interaction with each tool.

Unstructured Observations: Concrete observations were annotated via qualitative note-taking techniques with support of English translations by accompanying senior counselors (on few occasions when services were conducted in local languages). Observations were conducted in ZEHRP clinics in Lusaka, Copperbelt and Southern Provinces beginning May 18, 2013 through August 18, 2013. Concrete observations were guided by collaborations with ZEHRP staff regarding One Love study procedures. The National Institute of Health (NIH) One Love study aims to evaluate the impact of couples' testing on HIV incidence acquired within and outside the dyad. ZEHRP CVCT protocols guided further observations and included the following:

- Protocol-specific presentation of flip chart pages
- Amount of time dedicated to complete presentation of pages in the flip-chart
- Total length of time dedicated to service administration and client interaction during group counseling, pre-test counseling and post-test counseling
- Amount of interaction with each CVCT tool based on specifications in the protocols and standard operating procedures (i.e. penal model for condom demonstration)

- Amount of time dedicated to explaining available items and their benefits in the Good Health Package (GHP)
- Use of referral slips
- Use of check lists
- Task-shifting and interruption in services
- Administration of follow-up appointment cards
- Accurate recording and pilot-texting of client mobile numbers (names are not collected)
- Assessment of the cell phone call notification procedures for couples who are late for a follow-up appointment
- Progression of laboratory HIV testing procedures
- Assessment of OneLove study procedures: administering consent, blood sample collection, administering follow-up appointments

Additionally, observations were made on the availability of ZEHRP resources such as referral slips, GHP items, check-lists and invitation slips provided to CVCT counselors. Utilization or non-utilization of resources by CVCT counselors during CVCT clinic activities was also noted. We also observed feasibility of CVCT and LARC service delivery during weekend and weekday activities within the context of government clinics. In order to ensure strict adherence to ethical standards, counselors requested permission for student observations during CVCT counseling sessions from each couple. Couples were free to decline the presence of a student in the room at any time. When agreed upon by both counselor and clients, special attention was dedicated to variations among counselor attitudes and behaviors in administering post-test counseling to discordant couples.

Semi-Structured Observations: Upon conducting unstructured observations, a semi-structured observation guide was designed to capture comparable observations of clinic infrastructure and human resources available for LARC services and Couples' Family Planning

Counseling. Due to various time constraints, semi-structured observations were solely conducted in Lusaka and Copperbelt Province. In assessing feasibility of integrating Couples' Family Planning with Couples' HIV Counseling and Testing, the following observations were consistently tracked across Under-5 and Family Planning clinics via utilization of the semi-structured guide *(see Appendix):*

- Days/times of clinic activities
- Number of staff assisting clinic activities
- Available client rooms for clinic activities; space arrangement; access and rationing of clinic space
- Volume of clients

Furthermore, LARC-specific observations were recorded on the following:

- Available equipment for LARC: autoclaves; instruments for insertions and removals of LARC methods; availability of Jadelle and IUCD
- Current providers of LARC methods (government, organizations, NGOs, etc.)
- Suppliers of Jadelle and IUCD (government, organizations, NGOs, etc.)

Observational findings were analyzed by identifying common trends and themes associated with clinic infrastructure, ZEHRP resources, CVCT counselor interactions with resources and attitudes and behaviors towards service delivery.

In-Depth Interviews

Both unstructured and semi-structured observations informed the development of an IDI implemented with individual CVCT nurse counselors. Counselors were interviewed in 12 clinics: Lusaka (5), Copperbelt (3) and Southern Province (4). Due to feasibility components, 22 total counselor interviews were conducted: 11 in Lusaka, 6 in Copperbelt Province and 5 in Southern Province. The IDI guide was piloted on multiple occasions with fellow student researchers,

ZEHRP staff and senior CVCT counselors in the field. Appropriate alterations and feedback were carefully considered and incorporated to reflect the final IDI tool, accordingly.

Interviews were individually conducted with each CVCT nurse counselor in a private room/setting. Each interview lasted approximately 60 minutes. Each counselor was consented via the official ZEHRP consent form and immediately after, specific study aims were introduced. Upon ensuring CVCT counselor comprehension/understanding of the consent form, signatures were directly obtained on the consent form. Each CVCT nurse counselor received reimbursement in the amount of 20 Kwacha for participation in the IDI. Upon granted permission from each participating CVCT nurse counselor, the IDI was audio recorded alongside note-taking techniques.

The IDI included questions on the following topics:

- CVCT Service Delivery
- Referral Services
- Resources and ZEHRP Trainings
- ZEHRP Counselor Refresher Trainings
- Follow-Up Trends
- Counselor Challenges
- GHP
- Performance-based Incentive Scheme
- Activities and resources available in Under 5 and Family Planning clinics

Upon completion of each IDI, respondent answers were carefully reviewed and summarized based on emerging issues, counselor-reported challenges and perspectives related to each question. This process was consistently executed with the accumulation of each additional interview. Common themes were identified across interviews in each province. Following content and thematic analyses of all 22 IDIs, challenges and inconsistencies related to various

aspects of CVCT service delivery (i.e. referral administration, GHP, use of flip charts, feasibility of service integration etc.) were identified. Survey questions were developed with specific focus dedicated to a quality check process of IDI responses in order to ensure that IDI findings were not mere anomalies but rather a representation of overall challenges faced by ZEHRP trained counselors in all three Provinces. Surveys further confirmed challenges with ZEHRP trainings, low client follow-up trends, referral administration, use of flip chart pages, perceptions regarding the performance-based incentive scheme and challenges specific to the integration of CVCT and CFPC in routine Under-5 and Family Planning clinic activities.

Quantitative Surveys

The sequential qualitative data collection methods described (unstructured and semi-structured observations and IDIs) informed the development of a quantitative survey. First, unstructured and semi-structured observations guided knowledge regarding contextual challenges and barriers to service delivery. Observations were specific to utilization of CVCT resources, time dedicated to services, counselor interactions with CVCT tools, and facility, material and human resources assessments available for LARC service delivery. This seminal process allowed for a situational and context analysis which further guided the second step towards survey development, the design and implementation of an in-depth interview guide. The IDI guide was dedicated to capturing individual counselor knowledge, attitudes and practices regarding all aspects of ZEHRP trainings, services and activities. Finally, cumulative reviews and consistent quality checks of observations and IDI data collected influenced the development of a cross sectional survey tool. Survey topics and questions were based on thematic and content analyses of collective IDI and observational results. The survey included comprehensive questions on the following topics:

- General counselor information regarding employment history and trainings with ZEHRP
- Knowledge and interaction with available ZEHRP resources and trainings
- Challenges with CVCT service delivery and client follow-up
- Knowledge about available referral services and administration
- Barriers to LARC methods
- Knowledge of and perceptions regarding the ZEHRP performance-based incentive scheme
- Perceived challenges with integrating LARC and CVCT in Under-5 and Family Planning clinic activities

Surveys were administered in Lusaka, Copperbelt and Southern Provinces. Due to various time constraints and restricted participant availability during busy clinic activities, surveys in Southern Province were administered during a ZEHRP refresher training as opposed to administration during regular CVCT clinic activities. With the exception of surveys conducted in Copperbelt Province, all surveys were self-administered by each individual counselor. As a result of a combination of factors such as various levels of English competency of CVCT nurse counselors in the Copperbelt (thus requiring translation/ clarification of survey in local language) as well as miscommunication on survey instructions, ZEHRP staff verbally conducted the surveys with each counselor in Copperbelt Province. All survey participants were administered informed consent using official ZEHRP documentation. Reimbursement was administered to each participating ZEHRP counselor in the amount of 20 Kwacha (the equivalent of 4 USD).

Measurement and Analysis

Descriptive statistics (counts and percentages for categorical variables; means and standard deviations for continuous variables) will be calculated for survey results stratified by geographic region. Chi-square (or Fisher Exact) tests for categorical variables and Analysis of Variance (ANOVA) tests for continuous variables will identify variables distributed differently across Lusaka, Southern and Copperbelt Provinces.

Post-hoc bivariate analyses will be conducted on categorical survey variables to identify significant associations between knowledge and adherence measures using Chi-square (or Fisher Exact) tests, as appropriate.

Results

Counselor survey responses regarding operational procedures, resources, knowledge and perceptions are presented in Tables 1, 2 and 3.

TABLE 1. General Information, Resources and Training, Performance-based Incentive Scheme.

	Lusaka		Southern Province		Copperbelt		Total	
	Total (N=22)		Total (N=25)		Total (N=24)		(N=71)	
	N	%	N	%	N	%	N	%
General Information								
Years worked with ZEHRP as CVCT Counselor (mean and standard dev.)	4.2	2.6	4.2*	2.2*	2.6	0.8	3.7	0.95
Role/Trainings (Check all that apply)								
Data/lab	20	91%	21	84%	12	50%	53	75%
Trained to deliver LARC methods	8	36%	16	64%	7 +*+	29%	31	44%

Resources and Trainings

Use of Flipchart (Check all that apply)								
Group counseling	21	95%	24	96%	23	96%	68	96%
Pre-test counseling	22	100%	19	76%	24	100%	65	92%
Post-test counseling	22	100%	9	36%	23	96%	54	76%
Perceived Usefulness of Flipcharts								
Very useful	21	95%	21	84%	20	83%	62	87%
Useful	1	5%	2	8%	4	17%	7	10%
Somewhat useful	-	-	2	8%	-	-	2	3%
Not useful	-	-	-	-	-	-	-	-
Use of Flipchart during **Group Counseling**								
Read each page word-for-word	8	36%	11ǂ	44%	8	33%	27	38%
Use of the Flipchart during **Pre-test** Counseling								
Read each page word-for-word	7	32%	8ǂ	32%	6	25%	21	30%
Use of Flipchart during **Post-test** Counseling								
Read each page word-for-word	6	27%	1ǂ	4%	2	8%	9	13%
The flipchart includes a section on the GHP	20	91%	10*	42%	23	96%	53	75%

Attendance at ZEHRP Counselor Refresher Trainings								
Always	16	73%	15	60%	4	17%	35	49%
Often	3	14%	8	32%	3	13%	14	20%
Sometimes	3	14%	2	8%	14	58%	19	27%
Never	-	-	-	-	3	13%	3	4%
Satisfaction with Information received During Refresher Trainings **+								
Very Satisfied	15	68%	17	68%	7	29%	39	55%
Satisfied	7	32%	8	32%	13	54%	28	39%
Somewhat Satisfied	-	-	-	-	2	8%	2	3%
Not Satisfied	-	-	-	-	-	-	-	-
Don't Know	-	-	-	-	1	4%	1	1%
Confidence in delivery Of CVCT services**								
Very Confident	13	59%	12	48%	14	58%	39	55%
Confident	3	14%	2	8%	7	29%	12	17%
Somewhat Confident	6	27%	11	44%	3	13%	20	28%
Not Confident	-	-	-	-	-	-	-	-
Don't Know	-	-	-	-	-	-	-	-
I wish the Refresher Trainings Would include (Check all that apply)								
Printed hand-outs	21	95%	24	96%	18	75%	63	89%
More training on One Love and PATH	15	68%	17	68%	19	79%	51	72%

More info about how Counselor performance Is measured	12	55%	13	52%	18	75%	43	61%
More info about Referrals	6	27%	4	16%	7	29%	17	24%
Interactive participation	9	41%	9	36%	15	63%	33	46%
Guidelines for time management	12	55%	5	20%	12	50%	29	41%
Performance-based Incentive Scheme					*			
Changes to the performance-based incentive scheme occur monthly	9	41%	12	48%	4	17%	25	35%
Monthly changes are focused on (Check all that apply)								
Reducing counselor errors associated with updated CVCT procedures	16	73%	14	56%	11	46%	41	58%
Tracking counselor performance based on individual follow-Up rates	14	64%	15	60%	11	46%	40	56%
Don't know	1	5%	4	16%	10	42%	15	21%
			*					
Receipt of performance-based award from ZEHRP	5	23%	2	8%	4	17%	11	15%
The performance-based incentive scheme is (Check all that apply)			*	*				
Motivating and fair	15	68%	18	75%	8	33%	41	58%
Motivating but not fair	4	18%	3	13%	7	29%	14	20%
Fair but not motivating	-	-	1	4%	-	-	1	1%
Not motivating and not fair	1	5%	-	-	2	8%	3	4%
Don't know	2	9%	2	8%	7	29%	11	15%

*__One__ non-respondent

+*+ __Two__ respondents provided different results to the same question asked in a different part of the survey

ǂ Multiple options selected despite instructions to only select one option (group counseling: 3 counselors also selected “refer to flipchart one time or more per page”; pre-test counseling: 1 counselor also selected “refer to flipchart one time or more per page” and 1 counselor also selected “only refer to flip chart when I need to be reminded of information to present”; post-test counseling: 1 counselor also selected “refer to flipchart one time or more per page”.

**+ One respondent who answered that they never attend Refresher Training also answered that they are satisfied with the training and; one respondent who answered that they never attend Refresher Training was a non-respondent for this question.

**Example descriptions were presented for each option (i.e “Very confident” was defined as the counselor being able to perform all CVCT tasks and help other counselors with their tasks. “Not confident” was defined as the counselor requiring assistance before being able to perform ANY CVCT tasks)

TABLE 2. CVCT Service Delivery, Follow-Up and Referrals

	Lusaka		Southern Province		Copperbelt		Total	
	Total (N=22)		Total (N=25)		Total (N=24)		(N=71)	
	N	%	N	%	N	%	N	%
CVCT Service Delivery and Follow-Up								
If only one couple shows up At the clinic, I wait for one or more Couples to come in before I begin the group counseling session								
Always	2	9%	9	36%	1	4%	12	17%
Sometimes	8	36%	12	48%	12	50%	32	45%
Never	12	55%	4	16%	11	46%	27	38%
Time estimated for each CVCT counselling Session (in minutes) (mean and standard deviation)	*!		*!					
Group Counselling	39.8	12.8	39.4	12.8	34.1	14.6	37.8	1.0
Pre-test Counselling	32.3	14.5	23.1	12.3	21.1	13.4	25.5	1.1
Post-Test Counseling	23.5	8.7	21.1	10.3	-	-	22.3	1.1
ł ł								
Discordant	-	-	-	-	21.6	8.7*	21.6	8.7
Conc Pos	-	-	-	-	17.0	7.6*	17.0	7.6
Cong Neg	-	-	-	-	12.6	6.3	12.6	6.3

Male Circumcision referrals are administered to HIV Negative males***	22	100%	24	96%	-	-	46	98%
I administer male circumcision referrals to HIV Negative males during CVCT								
Always, regardless of client request	14	64%	11	44%	16	67%	41	58%
Sometimes	3	14%	7	28%	6	25%	16	23%
Only upon client request	5	23%	7	28%	1	4%	13	18%
Never	-	-	-	-	1	4%	1	4%
Clinic Follow-Up rates/ numbers are								
High	2	9%	1	4%	1	4%	4	6%
Medium	19	86%	16	64%	11	46%	46	65%
Low	1	5%	8	32%	12	50%	21	30%
Don't Know	-	-	-	-	-	-	-	-
Follow-Up rates at my clinic are Low or medium because (Check all that apply):	*+	*+	*++	*++	*+++	*+++		
HIV Neg clients fear Pos test at FUP	6	30%	8	36%	10	42%	24	34%
Reduced reimbursement Amnt from Mo0 to Mo1	9	45%	15	68%	10	42%	34	48%

Clients travel great distances To get to clinics	5	25%	8	36%	8	33%	21	30%
Clients don't understand Importance of FUP	6	30%	5	23%	8	33%	19	27%
GHP is not sufficient incentive	9	45%	4	18%	15	63%	28	39%
Clients are busy with work	18	90%	4	18%	13	54%	35	49%
Clients forget their scheduled Appointment date	14	70%	11	50%	16	67%	41	58%

Referrals ł ł

If MALE is POSITIVE and FEMALE is NEGATIVE, the following referrals Are administered (Check all that apply):	*		Total (N=24) CB Only	
ART	22	92%	22	92%
CVCT Follow-Up Appointment	19	79%	19	79%
FP	20	83%	20	83%
MC	5	21%	5	21%
If MALE is NEGATIVE and FEMALE is POSITIVE, the following referrals Are administered (Check all that apply):				
ART	22	92%	22	92%
CVCT Follow-Up Appointment	19	79%	19	79%
FP	20	83%	20	83%
MC	23	96%	23	96%

If MALE is POSITIVE and FEMALE is POSITIVE, the following referrals Are administered (Check all that apply):				
ART	23	96%	23	96%
CVCT Follow-Up Appointment	1	4%	1	4%
FP	20	83%	20	83%
MC	3	13%	3	13%
If MALE is NEGATIVE and FEMALE is NEGATIVE, the following referrals Are administered (Check all that apply):				
ART	1	4%	1	4%
CVCT Follow-Up Appointment	1	4%	1	4%
FP	21	88%	21	88%
MC	19	79%	19	79%

---

*! Time dedicated to post-test counselling specific to couple serostatus combination possibilities (i.e conc neg, conc pos and disco) was not collected in Lusaka and Southern Province.

ł ł Questions asked in Copperbelt only (N=24)

***One** non-respondent

***Question only asked in LSK and SOPRO (N=47)

*+ **Two** non-respondents in Lusaka (ie N=20)

*++**Three** non-respondents in SoPro (ie N=22)

*+++ **One** non-respondent in Copperbelt (ie N=23)

TABLE 3. Barriers to LARC and Integration of LARC and CVCT in Under-5 and FP Clinics

	Lusaka		Southern Province		Copperbelt		Total	
	Total (N=22)		Total (N=25)		Total (N=24)		(N=71)	
	N	%	N	%	N	%	N	%
Barriers to LARC Methods ł ł								
There are barriers to community Acceptability of LARC methods					20	83%	20	83%
What serves as barriers to LARC methods (Check all that apply) **++								
Church and religious beliefs of clients					15	63%	15	63%
Family and traditional influence over clients					18	75%	18	75%
Friends influence over clients					20	83%	20	83%

Myths in the community about LARC	22	92%	22	92%
Clients don't understand side effects Of LARC methods	16	67%	16	67%
Perceptions of why barriers to LARC occur (Check all that apply)	*			
People don't know benefits of LARC for FP	19	79%	19	79%
People don't like side effects of LARC methods	11	46%	11	46%
Husbands don't approve of LARC because they are not familiar with LARC	18	75%	18	75%
Women prefer to use other FP methods	15	63%	15	63%

Integration of LARC and CVCT in Under-5 and FP Clinics								
Challenges with integrating the new ZEHRP program combining LARC and CVCT into Under-5 and FP clinics +++								
Clinic space is small and Under-5 and FP clinic clients are many	8	36%	6	24%	18	75%	32	45%
There is little client privacy for LARC during Under-5 and FP weekday activities	5	23%	5	20%	17	71%	27	38%
There is not enough manpower to staff the clinics and counsellors get overwhelmed	5	23%	11	44%	16	67%	32	45%
This will make the clinics very busy with very long wait periods for the clients	2	9%	6	24%	12	50%	20	28%
It is difficult to have the women come with their spouses	1	5%	1	4%	15	63%	17	24%
Shortage of LARC instruments for Jadelle and IUCD insertions and removals	-	-	7	28%	5	21%	12	17%
Shortage of Jadelle and IUCD	-	-	7	28%	4	17%	11	15%

There are no challenges as long as CVCT counsellors have proper training	2	9%	1	4%	1	4%	4	6%

ł ł Questions asked in Copperbelt only (N=24)

**++ One respondent who answered that there are not barriers to LARC answered this question and; one non-respondent.

***One** non-respondent

+++ Although the survey indicated a skip pattern (i.e. if not trained in LARC, skip the last question about perceived challenges to integration of CVCT and CFPC in FP and Under-5), the skip pattern was not followed and some counselors (N=15 in CB and N=1 in LSK) who were not trained in LARC answered this question regardless. Please note also, free responses in Lusaka and Southern Province were themed and coded to fit the listed categories.

Table 1 delineates general information regarding years worked and training experience with ZEHRP, utilization and knowledge of CVCT resources and performance-based incentives for CVCT counselors. Table 2 highlights procedures and knowledge regarding service delivery and related information about client follow-up and referral administration. Table 3 presents counselor perceptions of barriers to LARC and challenges with integrating LARC and CVCT in Under-5 and Family Planning weekday clinic activities. A total of 71 surveys were administered in Lusaka, Copperbelt and Southern Provinces. There were 22 CVCT nurse counselor survey participants in Lusaka, 24 in Copperbelt Province and 25 in Southern Province.

Of the post-hoc bivariate analyses conducted, two were found to be statistically significant. These post-hoc analyses are discussed in the subsequent sections.

General Information (Table 1)

Among the 71 ZEHRP-trained and practicing counselors, 53 had additionally received data or laboratory training and 25 were trained to deliver LARC methods. Additionally, 69 of the 71 counselors were either regular or full-time counselors. Across the three provinces, the mean years of CVCT counselling work experience at ZEHRP were similar in Lusaka and Southern Province (mean= 4.2 years; standard deviation= 2.6 and 2.2, respectively) but much lower in the Copperbelt (mean= 2.6 years; standard deviation = 0.8). Analysis of Variance (ANOVA) calculations yielded statistically significant results (p=0.009) for ZEHRP counselor CVCT work experience across Lusaka, Southern and Copperbelt Province. Participants had varying levels of education, all were above the age of 18, and were mostly female (data currently not shown). There were no refusals by counselor to participate in the survey.

Resources and Trainings (Table 1)

Across the three provinces, 96% of counsellors reported consistent use of flip-chart during the group counselling session, 92% reported use of flipchart during pre-test counselling and 76% reported use of flip chart during post-test counseling. Southern Province counselors reported lowest flip chart utilization rates during pre- and post-test counseling, 76% and 36% respectively, compared to pre-and post-test flip chart utilization in Lusaka (100% for both pre- and post-test) and Copperbelt Province (100% pre-test and 96% post-test). Chi-Square analysis of differences in counselor flip chart utilization throughout all three CVCT counselling session (group-, pre- and post-test) across Lusaka, Southern Province and Copperbelt Province were not statistically significant ($p=0.26$).

When counselors across the three provinces were asked about whether or not the flip chart was referenced word-for-word during service delivery, only 38% reported word-for-word reiteration of the flip chart during group counselling, 30% during pre-test counselling and only 13% reported word-for-word reiteration of the flip chart during post-test counseling. Overall, 87% of counselors stated that they find the flip chart to be very useful for service delivery.

Across the three provinces, only 75% of counselors knew that the flip chart includes a section on the Good Health Package (GHP). A major knowledge gap exists in Southern Province, with only 42% of counselors reporting knowledge of the GHP flip chart section compared to 91% of counselors in Lusaka and 96% of counselors in the Copperbelt.

When asked about attendance at refresher trainings, less than half of counselor survey participants (49%) reported unswerving monthly attendance at refresher trainings (See Table 1). There was no significant association between consistent attendance at refresher trainings and

counselor use of flip chart during post-test counseling (p=0.39) (data not shown). Similarly, no significant association was found between consistent attendance at refresher trainings and word-for-word reiteration of post-test flip chart material across the three provinces (p=0.37).

Overall satisfaction with refresher trainings is high, with 55% of counselors across the three provinces reporting being very satisfied, while 39% report being satisfied. Of those with unwavering attendance at refresher trainings (N=35), 57% say they feel very confident in their CVCT service delivery defined as being able to perform all CVCT tasks in addition to supporting fellow counselor co-workers in completing their tasks. There was no significant association (p=0.72) between counselors always attending refresher trainings and feeling very confident in delivering CVCT services (data not shown). Confidence was grouped by “very confident” versus “confident”, “somewhat confident”, “ not confident” and “don’t know”. No counselor reported being unsatisfied with refresher trainings although suggestions regarding optimization of refresher trainings have been made as follow.

Across the three provinces, 89% of counselors stated that printed handouts with information on refresher training topics would be beneficial for future reference. Desire for printed handouts parallels the similar suggestion for increased training on One Love and Path study protocols (72%) as common issues arise around study consent forms and data collection procedures. 61% of counselors desire more information regarding metrics and counselor performance measurement. However, there was no significant association between counselor desire for emphasis on performance measurement metrics during refresher trainings and knowledge about monthly changes to the performance-based incentive scheme (p=0.68) (data not shown). Even though there was no statistically significant association between counselor desire for emphasis on performance measurement metrics and counselor knowledge about monthly

changes to the performance-based incentive scheme, in the Copperbelt there does appear to be a relationship between those two variables. 75% counselors in Copperbelt wish for more information on how their performance is being measured on the performance-based incentive scheme. This is corroborated by data on counselor knowledge about monthly changes to the performance-based incentive scheme (only 17% Copperbelt counselors know that changes occur on a monthly basis compared with knowledge of 41% of counselors in Lusaka and 48% of counselors in Southern Province).

Roughly 24% of counselors state that refresher trainings should place more emphasis on referrals. 46% of counselors desire opportunities for more interactive participation at refresher trainings while 41% of counselors desire guidelines for time management.

Performance-based Incentive Scheme (Table 1)

Despite low (35%) awareness of changes to the performance-based incentive scheme occurring on a monthly basis, 58% and 56% of counselors, respectively, correctly indicated that monthly changes to the performance-based incentive scheme are focused on reducing counselor errors associated with updated CVCT procedures and tracking counselor performance based on individual follow-up rates. 21% of counselors indicated they do not know the intended focus of monthly changes to the performance-based incentive scheme. Consistent monthly attendance at ZEHRP counselor refresher trainings is not significantly associated with knowledge regarding monthly changes to the performance-based incentive scheme ($p=0.20$) (data not shown).

Despite great emphasis on the importance of the performance-based incentive scheme by ZEHRP CVCT staff and perceived impact on counselor motivation, only 15% of counselors have received an award for their performance indicating either lack of optimal performance on the part

of the counselors or poor consistency in promoting the performance-based incentive scheme on the part of ZEHRP CVCT staff. In regards to counselor perceptions of the performance-based incentive scheme, 58% state that the system is motivating and fair, 20% state that the system is motivating but not fair, 1% state fair but not motivating, 4% state not motivating and not fair, while 15% state that they do not know.

CVCT Service Delivery (Table 2)

Regarding counselor procedures upon arrival of one couple at the clinic, 17% of counselors state that they always wait for at least one or more couples to arrive to initiate group counseling while 45% state that they sometimes wait for more couples to arrive in order to initiate group counseling. Only 38% of counselors stated that they never wait for more couples to arrive, implying that they immediately begin pre-test counseling with the couple who has first arrived at the clinic. Counselor monthly attendance at refresher trainings is not significantly associated with adherence to protocol regarding immediate initiation of services upon individual couple arrival at the clinics ($p= 0.53$) (data not shown). Further, monthly attendance at refresher trainings is not significantly associated with high levels of confidence (i.e. very confident) in service delivery among counselors in Lusaka, Southern and Copperbelt Province ($p=0.23$) (data not shown).

The amount of time expected for couples to go through the entire CVCT process beginning with group counselling through post-test counselling is roughly 60-90 minutes, largely dependent on test results (with discordant couples expecting lengthier post-test counselling sessions). When asked about time estimated for each CVCT counselling session, the mean time estimated for group counselling across the three provinces is 37.8 minutes (standard deviation= 1.0 minutes). For pre-test counseling, the mean time estimated for completion is 25.5 minutes

(standard deviation=1.1 minutes) while post-test counseling mean time estimate (based on Lusaka and Southern Province calculations only) is 22.3 minutes (standard deviation= 1.1 minutes). In the Copperbelt where post-test time estimate questions were asked specific to serostatus combination possibilities, mean time estimated for counseling couples with discordant test results is 21.6 minutes (standard deviation= 8.7) while mean time estimated for concordant positive couples is 17.0 minutes (standard deviation=7.6) and mean time estimated for concordant negative couples is 12.6 minutes (standard deviation= 6.3). ANOVA calculations did not yield significant results for group counselling session time estimates across Lusaka, Southern and Copperbelt Province (p=0.27) . ANOVA calculations yielded significant statistical results (p=0.01) for pre-test counselling session time estimates across the three provinces. ANOVA calculations conducted for Lusaka and Southern Province only did not yield significant results for post-test counseling time estimates (p=0.40) (data not shown).

Follow-Up (Table 2)

Currently, ZEHRP data indicates client follow-up rates across the three provinces are roughly 12% for concordant negative couples (M-F-), 21% for discordant couples in which male is HIV positive and female is HIV negative (M+F-) and 21% for discordant couples in which male is HIV negative and female is HIV positive (M-F+). When asked about perceptions of client follow-up rates at their clinics, 65% of counsellors estimated client follow-up rates at their clinic to be medium, 30% said low while only 6% said client follow-up rates at their clinic was high.

When asked about perceived reasons for low or medium client follow-up rates, personal and social client behavior characteristics were commonly listed factors. For instance, client

forgetting scheduled appointment date is the most commonly listed reason explaining low or medium follow-up rates (58%). Nearly half of counselor participants (49%) listed clients being busy with work as reason for why follow-up rates at their clinics are low or medium. 48% stated that reimbursement amount from Month 0 visit to Month 1 visit serves to demotivate clients. Further reasons for low or medium client follow-up rates listed include HIV negative clients fearing positive test results at follow-up (34%), clients needing to travel great distances to reach clinics (30%), clients not understanding importance of follow-up (27%), and GHP not serving as sufficient enough of an incentive for clients to return for follow-up (39%).

Referrals (Table 2)

Lusaka and Southern Province counselors only, were asked whether or not male circumcision referrals should be administered to HIV negative males. All surveyed counselors in Lusaka and 96% of counselors in Southern Province displayed knowledge that male circumcision referrals are to be administered to HIV negative males. When asked about actual behavioral components of whether or not counselors personally administer male circumcision referrals to HIV negative males, only 58% of counselors across the three provinces stated that they always administer male circumcision referrals to HIV negative males during CVCT, regardless of client request. Across the three provinces, 23% of counselors confessed to administering MC referrals sometimes while 18% confirmed administration of MC referrals only upon request from clients.

Only surveys administered in the Copperbelt included questions about referral administration specific to each possible serostatus combination. Regarding male positive, female negative (M+F-) discordant status, 92% of counsellors stated ART referral administration, 79%

stated administration of CVCT follow-up appointment, 83% stated administration of family planning referral, while 21% stated MC referral administration. In response to male negative, female positive (M-F+) discordancy, referral administration rates for ART, CVCT follow-up appointment and family planning mirrored statistics for M+F- discordancy status with the exception of MC referral administration. Of 24 counselors surveyed in the Copperbelt, 96% reported MC referral administration for M-F+ couples. For concordant positive couples (M+F+), 96% of counselors stated ART referral administration, 4% stated CVCT follow-up appointment administration, 83% stated administration of family planning referral while 13% stated MC referral administration. For concordant negative couples (M-F-), 4% of counselors indicated administration of ART referrals; CVCT follow-up appointment administration was also 4% while 88% of counselors indicated family planning referral administration and 79% of counselors indicated MC referral administration. Of the 16 post-hoc analyses conducted to determine possible associations between counselors always attending refresher trainings and counselor knowledge about referral service administration, none were found to be statistically significant.

Barriers to LARC Methods (Table 3)

Questions regarding barriers to community acceptability of LARC methods were asked of Copperbelt survey respondents only. 83% of Copperbelt counselors stated barriers to community acceptability of LARC methods. When asked about barrier factors in the community, 63% of counselors stated that church and religious beliefs were barriers to LARC methods among family and traditional influence over clients (75%), influence of friends over clients (83%) as well as community myths about LARC (92%). Additionally, 67% of counselors stated that side effects of LARC methods are not clearly understood by clients. Counselor perceptions

of why barriers to LARC occur included assessments concluding that community members are not aware of LARC benefits for family planning (79%), community members do not like side effects of LARC methods (46%), husbands' unfamiliarity with LARC leads to their further disapproval of the methods (75%), and women prefer to use other family planning methods (63%).

Integration of LARC and CVCT in Under-5 and Family Planning Clinics (Table 3)

Counselors in all three provinces were asked about challenges with integrating the new ZEHRP program combining LARC and CVCT service delivery in Under-5 and Family Planning Clinics. Free response challenges noted by Lusaka and Southern Province counselor survey respondents were themed into categories. Themed response categories were presented to Copperbelt survey respondents upon which all responses across the three provinces were then systematically coded to produce the following results. Across the three provinces, major challenges voiced by counselor survey respondents include small clinic space compounded by high client flow in Under-5 and Family Planning clinics (45%), concerns regarding client privacy in Under-5 and Family Planning clinics (38%), staff shortages (45%), overcrowded clinics with long client wait-periods (28%) and difficulty with getting male partners to the clinics (24%). Southern Province and Copperbelt Province counselors additionally voiced concerns regarding shortage of LARC instruments (17%) and shortage of Jadelle and IUCD (15%). A small percentage of counselors (6%) stated that there are no challenges as long as proper training is administered to counselors.

Discussion

Although attendance at counselor refresher trainings has been previously shown to be a predictor of knowledge and skills improvement [100], consistent monthly attendance at ZEHRP refresher trainings did not prove to be significantly associated with knowledge adherence variables in this study. Nevertheless, qualitative in-depth interviews with ZEHRP CVCT counselors reveal many counselors place critical significance on refresher trainings and attribute knowledge remission to irregular attendance at trainings. Refresher trainings are intended to strengthen counselor skills and confidence in CVCT and CFPC service delivery. Protocols and standard operating procedures are reiterated and counselors complete pre- and post-training tests to measure effectiveness of training and knowledge improvement [64]. Refresher trainings are intended to improve data collection, reduce counselor on-the-job errors and improve the overall quality of samples sent to ZEHRP laboratory for confirmatory results.

The three main ZEHRP counselor training types include (1) CVCT, (2) laboratory HIV testing and (3) data management and serve as critical components for counselor knowledge regarding service delivery. CVCT trainings consist of modules on couples' HIV counseling skills, providing serostatus results to discordant, concordant negative and concordant positive couples, support and prevention as well as "outreach and recruitment" [64]. Laboratory and data management trainings consist of both didactic and practicum portions focused on "good clinical laboratory practices" including sample collection and quality control for data recording [64]. These concepts continue to be reiterated throughout monthly refresher trainings.

The flip chart is an integral part of CVCT service delivery intended for consistent use during group, pre- and post-test counselling sessions. The flip chart includes critical information

about HIV modes of transmission, possible serostatus combinations, disclosure, male circumcision for HIV negative males, family planning and LARC methods, and information about Good Health Package items. Findings on use of flip chart indicate that with the progression of CVCT services from group counseling to post-test counseling, there is an overall corresponding decrease in use of flip chart by CVCT counselors across the three provinces.

Southern Province and Copperbelt Province counselors show much lower adherence patterns than Lusaka counselors in regards to word-for-word reiteration of post-test counseling flip chart pages. Southern Province counselors were much less likely than counselors in Lusaka and the Copperbelt to use the flip chart during post-test counseling. Post-test counselling is a critical component of CVCT providing a platform for counselors to emphasize the importance of follow-up visits for discordant and concordant negative couples, introduce the Good Health Package, and administered relevant referral slips. The post-test flip chart pages are intended to equip counselors with resources and knowledge to successfully deliver the aforementioned services. Inconsistent and incomplete use of this tool could serve as a barrier to client follow-up and prevention knowledge regarding HIV transmission.

ZEHRP research sites have been established in Lusaka and in the Coppberlt Province with no ZEHRP research site in Southern Province. Although ZEHRP Lusaka staff oversees activities in Southern Province, Southern Province counselors lack day-to-day oversight unlike Lusaka and Copperbelt counselors. This could explain occasional inconsistencies observed in Southern Province in regards to service delivery.

On average, counselors in Lusaka and Southern Province appear to outperform counselors in the Copperbelt in regards to knowledge around service delivery protocols. One

potential explanation could be the relatively high number of lay counselors in the Copperbelt in comparison to Lusaka and Southern Province. Lay counselors do not receive monthly refresher trainings; rather, lay counselors are only required to attend ZEHRP trainings every three months.

Low monthly attendance at refresher trainings in the Copperbelt, compared to Lusaka and Southern Province, could be a factor of longer periods of intermitted availability of refresher trainings to counselors in the Copperbelt. This data can also explain relatively low counselor satisfaction with refresher trainings in Copperbelt Province.

Factors associated with organizational, client and provider characteristics as well as contextual characteristics may serve as influential elements shaping counselor knowledge adherence to ZEHRP protocols. For instance, consistent on-site presence of the Lusaka ZEHRP program director may play a critical role in addition to weekly ZEHRP staff presence in Lusaka CVCT clinics, clinic proximity to clients in Lusaka, and consistent communication between counselors and staff in Lusaka all serve as influential considerations for counselor performance disparities across provinces.

Although the main ZEHRP research site in Copperbelt Province (one of two in Zambia) has been established for nearly 10 years, the mean years that Copperbelt counselors have worked with ZEHRP is half that of Lusaka and Southern Province counselors with a substantially fewer Copperbelt Province counselors trained in data and laboratory testing. This data can further be attributed to the high number of lay counselors in Copperbelt Province. This finding supports the case for developing strategies to improve counselor retention.

Southern Province counselors are far less likely to be aware of the fact that the flip chart includes a section on the Good Health Package (GHP). This further corroborates Southern

Province data on low usage of flip chart during post-test counselling as the GHP section is included at the end of the flip chart, following the post-test counselling section. The GHP is an incentive program including prevention, diagnosis, and treatment for common communicable and non-communicable diseases and is intended to promote increased follow-up. Counsellors are to reference the flip chart to present education and benefits of GHP items and encourage client follow-up (for discordant and concordant negative couples).

Across the three provinces, counselors indicate high demand for printed handouts with information received during refresher trainings as well as more training on One Love and PATH research protocols. This information upholds the qualitative data indicating increased reliance on ZEHRP phones for clarifying guidelines regarding study procedures and protocols amid busy clinic days. This interruption in service delivery leads to increased waiting periods for clients. Counselor desire for increased interactive participation during refresher trainings coincides with observational qualitative data on disengaged and disinterested counselor attitudes during refreshers. Desire for interactive participation during refreshers appears highest among Copperbelt counselors.

Due to the requirement for consistent adaptation in the transition from research to implementation, the ZEHRP CVCT team implements monthly changes to the performance assessment scheme based on ongoing challenges and trends observed with data collection and recording as well as relevant research implementation procedures. Thus, attendance at ZEHRP counselor refresher trainings becomes increasingly important for counselor knowledge to address challenges in enhancing service delivery and assist ongoing optimization of project operations. Mediocre attendance at refresher trainings translates to roughly one-third of counselors indicating knowledge of monthly changes to evaluation components of CVCT service delivery.

In Copperbelt Province, counselors show lowest knowledge of monthly changes to the performance-based incentive scheme compared to Lusaka and Southern Province. This coincides with data showing that the highest demand for emphasis on performance measurement metrics during refreshers comes from Copperbelt Province counselors. Nearly half of Copperbelt Province counselors responded "Don't Know" to the question regarding the focus of monthly changes to the performance-based incentive scheme. This indicates the need for improved communication strategies from ZEHRP staff regarding the performance-based incentive scheme during refresher trainings and beyond.

Counselors in Southern Province were less likely to have received awards for performance from ZEHRP compared to their Lusaka and Copperbelt Province counterparts. Lusaka counselors were most likely to have received awards for their performance among the three provinces. Given that data indicate that among the three provinces, Southern Province counselors are most likely to be aware that changes to the performance-based incentive scheme occur on a monthly basis, lack of awards in Southern Province could be a result of staff forgetting to distribute awards during monthly trainings in Southern Province. This presents implications for the potential impact of the presence of main research sites in Lusaka and Copperbelt Province.

With the exception of Copperbelt Province where counselors were most likely to express dissatisfaction or low knowledge regarding the performance-based incentive scheme, in general, Lusaka and Southern Province counselors felt that the performance-based incentive scheme was motivating and fair. This difference in perceptions regarding the performance-based incentive scheme could be attributed to interpersonal characteristics and counselor perceptions of "fairness" within ZEHRP across the three provinces.

To ensure optimal service delivery and reduce client waiting periods, CVCT counselors are required to begin CVCT services immediately upon individual couple arrival at the clinics. For instance, if two or more couples arrive at the clinic, CVCT counselors are to initiative group counselling. Similarly, if one couple is first to arrive, CVCT counselors are to begin pre-test counseling immediately. Among the three provinces, Southern Province counselors displayed lowest adherence to this standard operating procedure regarding service delivery with more than one-third of counselors in Southern Province indicating that they "always" wait for at least two couples to come in and then proceed with group counseling. This becomes an issue when couples end up spending nearly three hours at the initial clinic visit. Follow-up rates and further linkage to care could subsequently be affected by exceptionally long client wait periods during initial visit [103].

In regards to client follow-up, various factors such as operational (program characteristics), structural (i.e. poverty, transportation) and personal barriers (client and/or provider) could contribute to low or medium follow-up rates [104]. Reasons listed for low or medium follow-up rates, such as low knowledge among clients regarding importance of follow-up, may be inextricably linked to internal and external circumstances of providers. For instance, if clients lack knowledge around the importance of follow-up, given the data on progressively lower use of flip chart as clients move from group counseling through post-test counselling, perhaps counsellor engagement or disengagement with ZEHRP provided resources can explain client perceptions of CVCT follow-up visits. Similarly, provided the data indicating low knowledge of GHP flip chart section among Southern Province counselors implying low use of GHP flip chart section, perhaps counselor perception of client dissatisfaction with GHP items is

an associated outcome of counselor disengagement with this particular resource in service delivery.

In regards to referral administration , only 80% of Copperbelt Province counselors correctly indicated administration of CVCT follow-up appointments to within discordant couples (M-F+ and M+F-) (the keystone of ZEHRP research). This corresponds with ZEHRP follow-up rate reports indicating relatively low follow-up rates of discordant couples in the Copperbelt (18.7%) compared to Lusaka (28.9%) and Southern Province (19.2%). Data on low administration of CVCT follow-up appointments by Copperbelt counselors (4%) to concordant negative couples additionally serves to support the low concordant negative client follow-up rate (12%) in Copperbelt Province.

Family planning referrals should be offered to within discordant couples and concordant negative couples. Data indicate that family planning referrals are administered by roughly 85% of counselors. Male circumcision referral administration to HIV positive males and inconsistent administration to HIV negative males poses implications for future research on barriers to male circumcision referrals among Copperbelt counselors. Alongside uncertainty and a possible knowledge gap, this inconsistency in referral administration could be an issue of referral slips not being readily available at the clinics or counselors forgetting to administer referrals during busy clinic days. Future survey questions regarding referral administration should be carefully constructed to also capture client refusal rates as distinctly separate from provider administration of referrals.

In regards to family planning, LARC utilization appears to be greatly affected by community and social influences such as church, family and friends, long-rooted traditions and

ensuing misunderstanding and myths surrounding LARC methods (See Table 3). This data was only collected in Copperbelt Province and should be carefully interpreted in attempts to understand LARC service delivery and acceptability across provinces. Once again, counselor perceptions regarding reasons for community barriers to LARC such as the notion that clients lack knowledge regarding benefits of LARC for family planning, could perhaps be suggestive of interpersonal and contextual barriers of counselors and services rendered.

Alongside aforementioned differences across regions and possible influence over counselor knowledge and knowledge adherence associated with the presence of main research sites, cultural differences across provinces should also be evaluated for impact on service delivery practices of providers. For instance, in Southern Province, where polygamy has been part of traditional culture among the Tonga tribe [105], perceptions about "outside" partners and HIV transmission may interfere with knowledge about the importance of routine HIV testing and counselling and protective sexual behaviors. Overall low knowledge regarding health and social benefits of family planning, low use of family planning methods (especially modern methods) and low levels of education compounded by high value placed on fertility and large family units [45] prove challenging in the slow shift towards availability, accessibility and acceptability of family planning methods in Zambia.

Limitations

Study limitations include participant selection highly dependent on counselor availability and feasibility components around access to transportation. Similarly, due to staff availability and convenience factors related to time and transportation, counselor surveys conducted in Southern Province took place during refresher trainings. Surveying counselors during refresher

trainings may have introduced bias into the process of survey administration as counselors attending refresher trainings are more likely to have increased knowledge regarding components of CVCT and CFPC counseling in comparison to counselors absent from refresher trainings who were surveyed directly in the clinics. Further limitations related to survey administration include the process undertaken in the Copperbelt in which ZEHRP staff directly administered the counselor survey as opposed to self-administration by each individual counselor. This could have potentially introduced surveyor bias as well social desirability bias from survey respondents.

Unstructured observations which informed survey development included detailed notes captured during appropriate times and were not consistent across clinics.

In the process of continuous data quality control measures to ensure clarity and appropriateness of questions, the survey was optimized and improved from initial survey implementation in Lusaka. Some questions were dropped upon reach of saturation. Saturation was determined via preliminary data assessments yielding small variability across respondents. Some questions were improved to include more options from which to select. Questions specific to couple serostatus and referral administration in addition to questions about community barriers to LARC services were only included in the survey administered in Copperbelt Province. The same questions would need to be asked of Lusaka and Southern Province counselors to adequately determine difference across provinces.

The question regarding feasibility components in integrating CFPC with CVCT in Under-5 and Family Planning clinics listed options from which to choose from in Copperbelt Province but not in Lusaka or Southern Province. The question was revised and re-administered in Copperbelt upon analysis of Lusaka and Southern Province survey responses to the same

question in free-response form. The options provided to Copperbelt counselors were generated based on thematic analysis of free responses listed by counselors in Lusaka and Southern Province. Thus, presumably, if counselors in Lusaka and Southern Province had the same options available, data would have yielded more comparable statistics across the three provinces.

Conclusion and Recommendations

Though the ZEHRP training curriculum has been found to play a critical role in knowledge and skill improvement related to CVCT "counseling, testing and data recording procedures" among ZEHRP counselors [64], this study did not find refresher trainings to be significant predictors of provider-level adherence to Standard Operation Procedures (SOPs) including resources and tools designed to increase client retention. These findings could be exemplary of challenges in operational research with contextual and intrinsic characteristics of service providers as barriers to roll-out of implementation strategies. Although task shifting is becoming increasingly normalized with the Zambia Ministry of Health attempting to strengthen the work force and address health care staff shortages [64], considerations for trainings tailored to appropriate education levels should be strongly regarded. Further, this study found that refresher trainings leave much to be desired by counselors including printed hand-outs, interactive participation and increased emphasis on the performance-based incentive scheme and ZEHRP study protocols. Counselor feedback on refresher trainings should be incorporated as a component of continued optimization of refreshers. Inconsistencies in referral administration point to an opportunity for future improvement in counselor training as well as future research on availability of referral administration tools and available services in government clinics. The provider perspective is critical in the holistic understanding of perceived barriers and challenges to CVCT service delivery in addition to understanding sources of provider bias surrounding CVCT services. It is critical to consider regional differences when identifying and addressing counselor knowledge-adherence issues. Tailored, context-appropriate measures need to be employed in the adaptation of effective and efficient training and communication strategies.

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Appendices

Zambia-Emory HIV Research Project

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Dear Esteemed Sister in Charge at (Clinic Name),

First and foremost, thank you for your support and for your continuous collaboration with ZEHRP to provide CVCT services at your clinic.

From June to August, 2013 we are planning on conducting the following qualitative research studies which will involve in-depth interviews, focus groups and surveys with both CVCT counselors and clients. Research studies will be conducted by Emory students.

Alexandra Hoagland
Location: Lusaka, Zambia
Title: Community Perceptions of Long Acting Reversible Contraceptives in Lusaka, Zambia

Ana-Maria Visoiu
Location: Lusaka, Zambia
Title: Client Retention from the Provider Perspective: An Evaluation of Barriers to HIV Follow-Up at the Nurse Counselor Level in Government Clinics in Lusaka, Zambia

Samantha Jacobs
Location: Lusaka, Zambia
Title: An Assessment of Attitudes, Beliefs, and Intentions Towards Seeking Referral Services Among Clients Undergoing Couples' Voluntary Counseling & Testing (CVCT) in Zambia

These projects will help answer questions about knowledge, attitudes and practices regarding LARC among CVCT couples, client retention rates (follow-up) and improvements to the currently employed performance-based incentive scheme for counselors as well as questions regarding clients' perceptions and intentions towards seeking referral services upon CVCT.

Through their research, we hope to identify improvements around CVCT service delivery. ZEHRP hopes to use this data to better assist CVCT counselors in continuing to deliver quality services through increased use of LARC services, referral services and improved client follow-up rates.

All data collected will not include personally identifiable information and will be completely confidential. Names will not be used in the analysis; random participant numbers will be assigned.

Thank you kindly, once again! Your support is deeply appreciated and essential to the success of these projects.

Sincerest Regards,

Observation Guide

August 2013

Lusaka and Copperbelt Clinics

Clinic Name: _____

- **FP Clinics**
  - Dates/Times
  - Staff (#)
  - Room/Space (how many rooms)
  - Volume of clients
- **Under-5**
  - Dates/Times
  - Staff (#)
  - Room/Space (how many rooms)
  - Volume of clients

Equipment for LARC

- Autoclaves
- Instruments
- Kits

Who is currently delivering LARC (SFH, MSI, MoH)?

Where do implants/ IUD's come from?

CVCT Counselor Perceptions

Client Retention from the Provider Perspective: An Evaluation of Barriers to HIV Follow-Up at the Nurse Counselor Level in Government Clinics in Lusaka, Zambia

Protocol

And

In-Depth Interview Guide

Summer 2013

Ana-Maria Visoiu

Introduction and Consent

Good [morning/ afternoon].My name is Ana-Maria. First, I would like to thank you for your participation. Your time and perspectives are very valuable to me. I have the privilege of conducting In-Depth Interviews with CVCT counselors as part of a research project. This project aims to gain a holistic understanding of counselor knowledge and perceptions of CVCT services, resources and challenges to answer questions about ***client retention rates (follow-up),*** *improvements to the currently employed* ***performance-based incentive scheme,*** *and to understand* ***feasibility of CVCT services in Under 5 and FP Clinics****. Today, I would like to speak to you about your experience as a CVCT counselor. With your cooperation and guidance, I hope to learn from your knowledge of potential barriers to client follow-up rates. Additionally, I would like to learn about your perceptions and understanding of the current performance-based incentive scheme and your suggestions for improvements around CVCT service delivery for you as a counselor as well as to learn your suggestions for improving client retention rates. ZEHRP hopes to use this data to better assist you in continuing to deliver quality services and to increase client follow-up rates. I will be speaking to a total of 15CVCT counselors just like yourself about this topic because we feel that you have highly valuable experience and perspective to offer. Please know that your identity (including your name) will be completely confidential. I will be assigning you a random participant number which will not be linked to your name. I would like to say that there are no right or wrong answers, I will simply be discussing your views, opinions, and experiences; please feel comfortable and free to use this interview as an opportunity to voice your true feelings and overall perceptions.*

Before we begin, I would like to further say that I am here to learn from you and I value your opinions and experiences. Please know that your participation in this interview is voluntary. You may choose to stop the interview at any time. Additionally, if you do not feel comfortable answering a question, you may freely choose not to answer and I will skip to a different question.

I would like to tape-record this discussion; as our conversation will likely move faster than I am able to write notes, I would like to be sure that I do not miss anything you say. Please do not be concerned about this – once again I would like to assure you that our discussion will remain completely confidential. This recording will <u>not</u> be shared with anyone and will be destroyed immediately after transcription. The opinions you share will only be used for this research project.

Do I have your permission to record this discussion?
*Our interview will last approximately 60 minutes. Before we get started, do you have any questions for me? (****SIGN CONSENT FORMS****)*

Let's Begin –

Introduction questions

First, can you tell me a little bit about yourself?

Probes: How long have you lived in Lusaka?

Probes: Professional trainings (nurse mid-wife, professional degrees, specialization?) What is your favorite thing about your work?

Learning about CVCT nurse counselor experiences and service delivery

1. I would now like to learn about your experiences as a CVCT counselor.

   Probes: How long have you been a nurse counselor with ZEHRP? Why did you decide to become a CVCT nurse counselor? What is your favorite thing about being a CVCT counselor?

2. Can you please describe what a **typical CVCT shift** is like for you at the clinic?

   Probes: How many hours do you usually work? Please briefly describe your individual duties.

   Probes: How many clients do you usually see per day, weekend?

3. Can you please provide an overview of the step-by-step process of CVCT services beginning with when the first couple shows up until the couple leaves the clinic?

   For Initial Visit (Month 0):

   Probes: Time interval between client arrival and beginning of session. How do you typically begin the group counseling session (welcoming)? Please describe sequential flow of counseling and testing sessions (length of time of each session).

   Probes: How do you feel about the CVCT services you deliver at each step? Progressively more comfortable, less comfortable? Which sessions are the most difficult for you to counsel (discordant, concordant)?

   For Follow-up Visit:

   Probes: Time interval between client arrival and beginning of session. How do you typically begin the appointment (welcoming)? Please describe sequential flow of services during follow-up visits.

Probes: How do you feel about the CVCT services you deliver at each step? Progressively more comfortable, less comfortable? Which sessions are the most difficult for you to counsel (discordant, concordant)?

4. When do you discuss follow-up visits?

   Probes: Please describe how follow-up visits are introduced at the initial visit (Month 0).

Transition: As I would like to learn details about your overall experiences as a CVCT nurse counselor, I would like to ask you some questions specific to the CVCT counseling sessions you conduct.

5. So let's first think about a typical **group** counseling session.

   Probes: Please describe what usually goes on during this session. Length of group counseling session?

   Probes: How do you engage the clients in the group discussion, do you feel that clients are active participants? Who is most engaged in the group conversation (males, females)?

6. Now let's think about a typical **pre-test** counseling session.

   Probes: Please describe what usually goes on during this session. Length of pre-test counseling session?

   Probes: Can you give examples of common questions asked during these sessions? Who is typically asking most of the questions (male, female)?

7. Do any questions from the clients make you feel uncomfortable?

   Probes: Typical questions that cause you discomfort, how do you handle those questions?

8. Can you describe a typical **post-test** counseling session of:

   Probes: Concordant negative couples, concordant positive couples, discordant couples (Please describe the process: procedures and protocols)

   Probes: Length of session.

Transition: Now I would like to ask a few questions about referral services.

Referral Services

9. Can you please describe the referral services available?

   Probes: family planning, male circumcision, sexually transmitted diseases, ARV services? Where are each services available (clinics, off-site)? Please discuss client eligibility.

10. Are clients asked if they will use the referral slips to seek services?

    Probes: Are clients followed up on their commitment? (Do you think it would be difficult to follow-up?)

11. Can you describe the client responses (verbal/non-verbal) to referrals?

    Probes: Do clients ask for referrals or are they administered automatically upon eligibility?

12. Can you describe any personal challenges with referrals?

    Probes: utility of forms, length of time to complete form, forms readily available in all clinic counseling rooms?

Resources and ZEHRP Trainings

13. Can you please describe the **resources** involved in CVCT service delivery?

    Flip Charts:

    Probes: Please describe the flip charts, client interactions with/ (reactions to) the flip charts; counselor challenges and benefits of use, easy to use, benefits and challenges to use, suggestions for improvement.

    Rapid Test Kits and Other Materials:

    Probes: Alere Determine, Uni-Gold, condom demonstration materials, forms, log books CVCT phones, *invitation slips (*follow-up slips), others?

14. What do you think about each of these resources (availability?)

    Probes: Easy to use, important/useful, benefits and challenges, suggestions for improvement?

15. Can you please describe the ZEHRP Counselor Refresher Trainings you receive?

    Probes: How often do you receive training, what kind of information is given in the training session?

16. Are there topics you would want to receive training in?

    Probes: Are there trainings (topics) available that you have not yet participated in? Please explain.

17. Please describe a typical ZEHRP Refresher training session.

    Probes: Location of training sessions (at clinics, at ZEHRP research site- what do you think about the location of the training, learning facilitation?), reimbursement, length of each training session, sequence of events, perceived challenges, benefits and limitations.

18. Do you attend all or most ZEHRP Refresher trainings?

    Probes: Please explain why or why not.

19. How do you feel about the ZEHRP Refresher trainings you receive?

    Probes: sufficient, interactive, too many/ too few? Do you feel equipped with knowledge you need for CVCT service delivery (confidence, motivation)?

    Probes: Suggestions for improvements/efficiency?

Discussing Follow-Up Trends

20. Please describe **CVCT follow-up weekends**.

    Probes: Describe a typical follow-up CVCT weekend visit. Client appointment reminders, length of each follow-up visit, extra hours, number of counselors on site?

    Probes: How many follow-up weekends does your clinic usually have each month (one, two?)

    Probes: How many couples do you normally counsel during follow-up weekends?

21. Do follow-up clients come as a couple or separate?

    Probes: If separate, what are some reasons stated for coming alone? What is the action you take?

Probes: Male or female more likely to come alone?

Clients and Follow-Up

Transition: Now I would like to ask some questions specific to clients:

22. How would you describe the clients that come in for CVCT services? (Can you please describe client characteristics of those individuals who are likely to come to the clinics?)

    Probes: Demographics, education level, locals or far commuters, religions, polygamy, concurrent sexual partners?

23. Can you describe the resources/services available to the clients?

    Probes: **Incentives (GHP)** /reimbursements, immediate services available (i.e. LARC)?

    Probes: How do clients feel about these resources/services/ incentives?

24. Can you please describe your feelings about resources/services delivered?

    Probes: suggestions for improvements?

25. Can you please tell me about the client follow-up rates at this clinic (low, high; *estimates*)?

26. Can you explain why you think some clients don't return for follow-up visits?

    Probes: household dynamics, misunderstanding of services, fear of test results, transportation, fear of stigma?

Transition: Now I would like to talk a little bit about your personal experience and feelings when you first discover the status of couples:

27. Can you describe your reactions and feelings when you first discover the status of:

    Probes: Concordant negative
    Probes: Concordant positive
    Probes: Discordant

Discussing CVCT in Antenatal Clinics

I would now like to ask some questions related to CVCT services provided in Antenatal Clinics.

28. How many days of the week are antenatal services provided at this clinic? (Probe: which days of the week?)

29. Can you describe activities in the Antenatal Clinics?

    Probes: services, responsibilities, tasks

30. What are the challenges to delivering CVCT in Antenatal Clinics?

31. Can you describe the advantages to CVCT services in Antenatal Clinics?

32. Can you describe the disadvantages to CVCT services in Antenatal Clinics?

Discussing CVCT in Under 5 Clinics

As CVCT will be transitioning to Under 5 and FP Clinics, I would like to learn about your experience and perceptions about CVCT services in these clinics.

33. How many days of the week are Under 5 services provided at this clinic? (Probe: which days of the week?)

34. Can you describe activities in Under 5 Clinics?

    Probes: services, responsibilities, tasks

35. What are some perceived challenges to delivering CVCT in Under 5 Clinics?

36. Can you describe the advantages to delivering CVCT services in Under 5 Clinics?

37. Can you describe the disadvantages to delivering CVCT services in Under 5 Clinics?

Discussing CVCT in FP Clinics

38. How many days of the week are FP services provided at this clinic? (Probe: which days of the week?)

39. Can you describe activities in FP Clinics?

    Probes: services, responsibilities, tasks

40. What are some perceived challenges to delivering CVCT in FP Clinics?

41. Can you describe the advantages to delivering CVCT services in Under 5 Clinics?

42. Can you describe the disadvantages to delivering CVCT services in FP Clinics?

Feasibility of CVCT in Under 5 and FP Clinics

43. Can you describe the clients that come in to Under 5 and FP Clinics?
    Probes: demographics, education level, motivation to seek services

44. How do you perceive the clients to feel about CVCT in these clinics?
    Probes: motivation to participate in CVCT

45. Can you describe the physical space in Under 5 and FP clinics?
    Probes: How many rooms? Are the rooms conducive to CVCT services (client privacy)

46. Are there any challenges (logistical barriers) that would need to be considered in delivering CVCT services at these clinics? Probes: logistically, service related, client related, provider related

CVCT Promotion in Under 5 and FP Clinics

47. How many clients do Under 5 and FP Clinics receive, respectively?

48. What methods do you feel would be most successful in promoting CVCT in Under 5 and FP Clinics? Probes: strategies, activities

49. Do you have any suggestions for how to best promote partners coming in as a couple to these clinics? Probes: previous successful examples

50. How effective do you feel that promotional efforts in Under 5 and FP Clinics will be? Probes: what are the reasons leading to your conclusion?

Challenges faced by CVCT counselors

51. Can you describe some of the challenges you are faced with as a CVCT counselor?

    Probes: Can you describe your feelings about these challenges?

    Probes: How do these challenges affect you personally?

52. Please describe how you address these challenges.

53. Of those challenges you have named, what do you consider to be the **greatest challenge** in your service delivery?

    Probes: Please describe your feelings about this. How does it affect you, how do you address it, how do you feel when you address this challenge?

    Probes: Do you feel comfortable discussing this challenge with the Sister in Charge, other CVCT counselors, ZEHRP CVCT staff members?

Discussions about the Good Health Package

54. Can you please talk a little bit about the Good Health Package?

    Probes: when do GHP items get distributed, to whom?

    Probes: How do you feel about the GHP? Do you feel GHP helps with improving follow-up rates?

55. How do you perceive that clients feel about the GHP?

56. How are GHP items explained (demonstrations of use)?

    Probes: Do you use the flip charts to explain GHP items? Do clients receive demonstration on use of some of the items offered by the GHP (BP, chlorine etc.)?

Discussing the performance-based incentive scheme

Transition: Now I would like to ask some questions specific to your knowledge and feelings about the current incentive scheme for performance.

57. Can you please describe the performance-based incentive scheme? (How does it work?)

    Probes: How is performance measured (tools used: i.e. invitation slips, log books, appointment books, follow-up books)? What are the rewards (for individual counselor; for clinic)?

58. Have you ever received a reward for your performance?

59. Has your clinic ever received a reward for performance?

60. Has anyone you know received a reward for performance? (How did you feel?)

61. Do you feel the performance-based incentive system is a fair system?

    Probes: Why or why not?

62. If you could make any changes to the performance-based incentive scheme, what would those changes include:

    Probes: Improvements to performance-tracking system (how would you increase fairness within this system)? Alternative suggestions for recognition of individual and clinic performance (tracking methods, rewards).

    (Note: these probes may not be relevant if counselor does not introduce the issue of fairness)

Thank you very much for sharing your experience with me. I really value your perspectives.

Conclusion

Transition: In the last part of our discussion, I would like to learn about any other issues or topics that we have not covered.

63. Are there other concerns that you would like to bring up in our discussion today or things that you would like to further share with me?

Thank you very much for your time and perspectives. You views are highly valued and have provided me with great insight.

Lastly, are there any questions you would like to ask me?

Thank you again for your valuable contribution to my project.

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CVCT Counselor Survey

Survey Identification

Surveyor Initials:_____ **City:**_____ **Clinic:** _____

Date of survey(dd/mmm/yyyy): |____|____||____|____||____||_2_|_0_|_1_|_4_|

➡ *IMPORTANT NOTE: Surveys are to be administered to CVCT counselors in government clinics in Lusaka, **Copperbelt** and Southern Provinces. 25 surveys are to be proportionately administered in each Province for a total of 75 surveys. This seven part survey is conducted to improve services offered at CVCT and linkages to care by understanding counsellor knowledge and attitudes about programs, protocols and activities available through ZEHRP.*

Survey instructions:

1. Fill in the response to every question with a check mark " √ ".
2. Check the box that corresponds with the answer given.
3. Check **one answer** per question **unless the directions under a question allow for multiple answers**.
4. Follow instructions located next to answers to follow skip patterns.
5. In recording fill-in-the-blank answers, you may use the space available to write in responses.

➡ *IMPORTANT NOTE: Your participation in this survey is voluntary, and you can stop at any time. Your completion of this survey will be confidential and will only be used for this research project. There are no right or wrong answers. Your name will not be associated with this survey in any way. The information you provide is highly valued and we greatly appreciate the time you have dedicated to complete this survey. This survey should take 10-15 minutes to complete.*

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CVCT Counselor Survey

Part 1: General Information

1. How many years have you worked as a CVCT counselor with ZEHRP (if less than one year, indicate how many months).

   _____

2. Indicate your role and training(s) with ZEHRP (check all that apply)
   - ☐ Lay Counselor
   - ☐ Full Time Counselor
   - ☐ Regular Counselor
   - ☐ Programme Manager
   - ☐ Monitoring and Evaluation
   - ☐ Data/Lab
   - ☐ LARC
   - ☐ CFPC
   - ☐ Other_____

Part 2: Resources and Trainings

3. During which counselling sessions do you use the flip chart? (Check all that apply)
   - ☐ Group counselling
   - ☐ Pre-test
   - ☐ Post-test

4. How useful do you find the flip chart to be during the CVCT sessions (Check one)?
   - ☐ Very useful
   - ☐ Useful
   - ☐ Somewhat useful
   - ☐ Not useful

5. Please describe your use of the flip chart during the **group** counselling session (Check one)
   - ☐ I read each page of the flip chart word for word when presenting material to the clients
   - ☐ I refer to the flip chart one time **or** more per page
   - ☐ I refer to the flip chart once per page
   - ☐ I only refer to the flip chart when I need to be reminded about information to present
   - ☐ I do not use the flip chart for this session

6. Please describe your use of the flip chart during the **pre-test** counselling session (Check one)
   - ☐ I read each page of the flip chart word for word when presenting material to the clients
   - ☐ I refer to the flip one time **or** more per page
   - ☐ I refer to the flip chart once per page
   - ☐ I only refer to the flip chart when I need to be reminded about information to present
   - ☐ I do not use the flip chart for this session

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CVCT Counselor Survey

7. Please describe your use of the flip chart during **post-test** counselling session (Check one)
   - ☐ I read each page of the flip chart word for word when presenting material to the clients
   - ☐ I refer to the flip chart one time **or** more per page
   - ☐ I refer to the flip chart once per page
   - ☐ I only refer to the flip chart when I need to be reminded about information to present
   - ☐ I do not use the flip chart for this session

8. If you answered that you do not use the flip chart for any of the sessions in numbers 5-7, what are some of the reasons why you do not use the flip chart (Check all that apply)?
   - ☐ N/A, I use the flip chart
   - ☐ I feel I have the information memorized
   - ☐ The flip chart is not always available to me when I need it
   - ☐ I do not have enough time
   - ☐ Other_____

9. The flip chart includes a section on the Good Health Package (Check one).
   - ☐ True
   - ☐ False
   - ☐ Don't Know

10. I attend ZEHRP Counselor Refresher Trainings (Check one).
    - ☐ Always
    - ☐ Often
    - ☐ Sometimes
    - ☐ Never

11. How satisfied are you with the information you receive at Refresher Trainings (Check one)?
    - ☐ Very satisfied
    - ☐ Satisfied
    - ☐ Somewhat satisfied
    - ☐ Not satisfied
    - ☐ Don't Know

12. How confident do you feel in the CVCT services you deliver (Check one)?
    - ☐ Very confident (I am able to perform all CVCT tasks and I help other counselors with their tasks)
    - ☐ Confident (I am able to perform all CVCT tasks without requiring assistance)
    - ☐ Somewhat confident (I am able to perform all CVCT tasks but require assistance on occasion)
    - ☐ Not confident (I require assistance before I am able to perform any CVCT tasks)
    - ☐ Don't Know

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CVCT Counselor Survey

13. I wish the Refresher Trainings would include: (Check all that apply)
- ☐ Printed hand-outs
- ☐ More training on One Love and PATH protocols/procedures
- ☐ More information on how counselor performance is being measured on the monthly reward system
- ☐ More information about referrals
- ☐ More opportunities for interactive participation from counselors
- ☐ Guidelines for time management during CVCT service delivery
- ☐ Other_____

_____

Part 3: CVCT Service Delivery and Follow-Up

14. If a couple is the first to arrive at the clinic for CVCT, I wait for one or more couples to come in before I begin the group counselling session (Check one).
- ☐ Always
- ☐ Sometimes
- ☐ Never

15. How much time do you estimate to dedicate to each CVCT counselling session (**in minutes**)?
- ☐ Group counselling: _____ minutes
- ☐ Pre-test counselling : _____ minutes
- ☐ Post-Test counselling: Discordant: _____ minutes

  Concordant Positive: _____ minutes

  Concordant Negative:_____ minutes

16. I administer male circumcision referrals to HIV negative males during CVCT (check one).
- ☐ Always, regardless of request from the client
- ☐ Only upon request from the client
- ☐ Never
- ☐ Sometimes

17. How would you describe the follow-up rates/numbers at your clinic (Check one)?
- ☐ High
- ☐ Low
- ☐ Medium
- ☐ Don't Know

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CVCT Counselor Survey

If you answered High or Don't Know for Question 17, skip to question 19.

18. I believe follow-up rates at my clinic are Low or Medium because (Check all that apply):
    - ☐ HIV negative clients fear testing positive at follow-up
    - ☐ Reduced reimbursement amount from Month 0 to Month 1 demotivates clients
    - ☐ Clients need to travel great distances to get to the clinics
    - ☐ Clients do not understand the importance of follow-up
    - ☐ The GHP is not sufficient incentive for clients to return for follow-up
    - ☐ Clients are busy with work and do not have time to return to the clinics
    - ☐ Clients forget their scheduled appointment date
    - ☐ Other_____
      _____
      _____

Part 4: Referrals: *The next 4 questions will ask about possible HIV results in couples and referrals.*

19. If **MALE is POSITIVE and FEMALE is NEGATIVE,** which of the following referrals do you administer (Check all that apply):
    - ☐ Antiretroviral Therapy (ART)
    - ☐ Couples Voluntary Counseling and Testing (CVCT) Follow-Up Appointment
    - ☐ Family Planning (FP)
    - ☐ Male Circumcision (MC)

20. If **MALE is NEGATIVE and FEMALE is POSITIVE,** which of the following referrals do you administer (Check all that apply):
    - ☐ Antiretroviral Therapy (ART)
    - ☐ Couples Voluntary Counseling and Testing (CVCT) Follow-Up Appointment
    - ☐ Family Planning (FP)
    - ☐ Male Circumcision (MC)

21. If **MALE is POSITIVE and FEMALE is POSITIVE,** which of the following referrals do you administer (Check all that apply):
    - ☐ Antiretroviral Therapy (ART)
    - ☐ Couples Voluntary Counseling and Testing (CVCT) Follow-Up Appointment
    - ☐ Family Planning (FP)
    - ☐ Male Circumcision (MC)

22. If **MALE is NEGATIVE and FEMALE is NEGATIVE,** which of the following referrals do you administer (Check all that apply):
    - ☐ Antiretroviral Therapy (ART)
    - ☐ Couples Voluntary Counseling and Testing (CVCT) Follow-Up Appointment
    - ☐ Family Planning (FP)
    - ☐ Male Circumcision (MC)

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CVCT Counselor Survey

Part 5: Barriers to Long Acting Reversible Contraceptive (LARC) methods:

23. Are there any barriers to community acceptability of Long Acting Reversible Contraceptive (LARC) methods (Check one)?
    - ☐ Yes
    - ☐ No
    - ☐ Don't Know

24. What serves as barriers to Long Acting Reversible Contraceptive (LARC) methods (Check all that apply)?
    - ☐ Church and religious beliefs of the clients
    - ☐ Family and traditional influence over the clients
    - ☐ Friends influence over the clients
    - ☐ Myths in the community about LARC
    - ☐ Clients do not understand that side effects of LARC will not continue after the body becomes accustomed to the LARC method of their choice
    - ☐ Other_____
      _____

25. Why do you think barriers to acceptability of Long Acting Reversible Contraceptive (LARC) methods occur (Check all that apply) ?
    - ☐ People don't know the benefits of LARC methods for Family Planning
    - ☐ People don't like the side effects of LARC methods
    - ☐ Husbands don't approve LARC methods because they are not familiar with LARC
    - ☐ Women prefer to use other Family Planning methods
    - ☐ Other_____
      _____

Part 6: Performance-based Incentive Scheme

26. Changes to the performance-based incentive scheme occur every month (Check one).
    - ☐ True
    - ☐ False
    - ☐ Don't Know
27. Monthly changes to the performance-based incentive scheme are focused on (Check all that apply)
    - ☐ Reducing counselor errors associated with updated CVCT procedures
    - ☐ Tracking counselor performance based on individual follow-up rates
    - ☐ Don't Know
    - ☐ Other_____

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CVCT Counselor Survey

28. Have you ever received an award from ZEHRP for your performance (Check one)?
- ☐ Yes
- ☐ No
- ☐ Don't Know

29. The performance-based incentive scheme is (Check one):
- ☐ Motivating and fair
- ☐ Motivating but not fair
- ☐ Fair but not motivating
- ☐ Not motivating and not fair
- ☐ Don't Know

30. Have you been trained to deliver Long Acting Reversible Contraceptive (LARC) methods? (Check one)
- ☐ Yes
- ☐ No

Part 7: Integrating LARC and CVCT in Under-5 and Family Planning Clinics

31. What are some challenges with integrating the new ZEHRP program combining LARC and CVCT services into Under-5 **and** Family Planning weekday clinic activities (resources, clinic space, staff): Check all that apply.
- ☐ Clinic space is small and Under-5 and FP Clinic clients are many
- ☐ There is little client privacy for LARC during Under-5 and FP weekday activities
- ☐ There is not enough manpower to staff the clinics and counsellors get overwhelmed
- ☐ This will make the clinics very busy with very long wait periods for the clients
- ☐ It is difficult to have the women come with their spouses
- ☐ Shortage of LARC instruments for Jadelle and IUCD insertions and removals
- ☐ Shortage of Jadelle and IUCD
- ☐ There are no challenges as long as CVCT counsellors have proper training
- ☐ Other_____

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CVCT Counselor Survey

Survey Identification
Surveyor Initials:_____ **City:**_____ **Clinic:** _____
Date of survey(dd/mmm/yyyy): |____|____||____|____||____||_2_|_0_|_1_|_3_|

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   - ☐ Lay Counselor
   - ☐ Full Time Counselor
   - ☐ Regular Counselor
   - ☐ Programme Manager
   - ☐ Monitoring and Evaluation
   - ☐ Data/Lab
   - ☐ LARC
   - ☐ Other_____

Part 2: Resources and Trainings

3. During which counselling sessions do you use the flip chart? (Check all that apply)
   - ☐ Group counselling
   - ☐ Pre-test
   - ☐ Post-test

4. How useful do you find the flip chart to be during the CVCT sessions?
   - ☐ Very useful
   - ☐ Useful
   - ☐ Somewhat useful
   - ☐ Not useful

5. Please describe your use of the flip chart during the group counselling session
   - ☐ I read each page of the flip chart word for word when presenting material to the clients
   - ☐ I refer to the flip chart at least once per page
   - ☐ I refer to the flip chart once per page
   - ☐ I only refer to the flip chart when I need to be reminded about information to present
   - ☐ I do not use the flip chart for this session

6. Please describe your use of the flip chart during the pre-test counselling session
   - ☐ I read each page of the flip chart word for word when presenting material to the clients
   - ☐ I refer to the flip chart at least once per page
   - ☐ I refer to the flip chart once per page
   - ☐ I only refer to the flip chart when I need to be reminded about information to present
   - ☐ I do not use the flip chart for this session

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CVCT Counselor Survey

7. Please describe your use of the flip chart during the post-test counselling session
   - ☐ I read each page of the flip chart word for word when presenting material to the clients
   - ☐ I refer to the flip chart at least once per page
   - ☐ I refer to the flip chart once per page
   - ☐ I only refer to the flip chart when I need to be reminded about information to present
   - ☐ I do not use the flip chart for this session

8. If you answered that you do not use the flip chart for any of the sessions in numbers 5-7, what are some of the reasons why you do not use the flip chart?
   - ☐ N/A, I use the flip chart
   - ☐ I feel I have the information memorized
   - ☐ The flip chart is not always available to me when I need it
   - ☐ I do not have enough time
   - ☐ Other_____
     _____
     _____

9. The flip chart includes a section on the Good Health Package.
   - ☐ True
   - ☐ False
   - ☐ Don't Know

10. I attend ZEHRP Counselor Refresher Trainings (check one).
    - ☐ Always
    - ☐ Often
    - ☐ Sometimes
    - ☐ Never

11. How satisfied are you with the information you receive at Refresher Trainings (check one)?
    - ☐ Very satisfied
    - ☐ Satisfied
    - ☐ Somewhat satisfied
    - ☐ Not satisfied
    - ☐ Don't Know

12. How confident do you feel in the CVCT services you deliver?
    - ☐ Very confident (I am able to perform all CVCT tasks and I help other counselors with their tasks)
    - ☐ Confident (I am able to perform all CVCT tasks without requiring assistance)
    - ☐ Somewhat confident (I am able to perform all CVCT tasks but require assistance on occasion)
    - ☐ Not confident (I require assistance before I am able to perform any CVCT tasks)
    - ☐ Don't Know

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CVCT Counselor Survey

13. I wish the Refresher Trainings would include: (Check all that apply)
    - ☐ Printed hand-outs
    - ☐ More training on One Love and PATH protocols/procedures
    - ☐ More information on how counselor performance is being measured on the monthly reward system
    - ☐ More information about referrals
    - ☐ More opportunities for interactive participation from counselors
    - ☐ Guidelines for time management during CVCT service delivery
    - ☐ Other_____

      _____

Part 3: CVCT Service Delivery and Follow-Up

14. If a couple is the first to arrive at the clinic for CVCT, I wait for one or more couples to come in before I begin the group counselling session.
    - ☐ Always
    - ☐ Sometimes
    - ☐ Never

15. How much time do you estimate to dedicate to each CVCT counselling session (in minutes)?
    - ☐ Group counselling _____
    - ☐ Pre-test counselling _____
    - ☐ Post-Test counselling _____

16. Male Circumcision referrals are administered to HIV negative males
    - ☐ True
    - ☐ False
    - ☐ Don't Know

17. I administer male circumcision referrals to HIV negative males during CVCT (check one).
    - ☐ Always, regardless of request from the client
    - ☐ Sometimes
    - ☐ Upon request from the client
    - ☐ Never

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CVCT Counselor Survey

18. When administering referrals, how do you explain referral services? (Check one from each box)

(Check one)
- ☐ I always explain health benefits associated with each referral service offered regardless of being asked by the client
- ☐ I only explain health benefits associated with each referral service offered when asked by the client
- ☐ I never explain health benefits associated with each referral service offered

(Check one)
- ☐ I explain location and available times to seek referral services at the clinic regardless of being asked by the client
- ☐ I explain location and available times to seek referral services at the clinic when asked by the client
- ☐ I never explain location and available times to seek referral services

19. How would you describe the follow-up rates/numbers at your clinic?
- ☐ High
- ☐ Medium
- ☐ Low
- ☐ Don't Know

If you answered High or Don't Know for Question 19, skip to question 21.

20. I believe follow-up rates at my clinic are Low or Medium because (check all that apply):
- ☐ HIV negative clients fear testing positive at follow-up
- ☐ Reduced reimbursement am_ount from Month 0 to Month 1 demotivates clients
- ☐ Clients need to travel great distances to get to the clinics
- ☐ Clients do not understand the importance of follow-up
- ☐ The GHP is not sufficient incentive for clients to return for follow-up
- ☐ Clients are busy with work and do not have time to return to the clinics
- ☐ Clients forget their scheduled appointment date
- ☐ Other_____

_____

Part 4: Performance-based Incentive Scheme

21. Changes to the performance-based incentive scheme occur every month.
- ☐ True
- ☐ False
- ☐ Don't Know

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CVCT Counselor Survey

22. Monthly changes to the performance-based incentive scheme are focused on (check all that apply)
    - ☐ Reducing counselor errors associated with updated CVCT procedures
    - ☐ Tracking counselor performance based on individual follow-up rates
    - ☐ Don't Know
    - ☐ Other_____

23. Have you ever received an award from ZEHRP for your performance?
    - ☐ Yes
    - ☐ No
    - ☐ Don't Know

24. The performance-based incentive scheme is (check one):
    - ☐ Motivating and fair
    - ☐ Motivating but not fair
    - ☐ Fair but not motivating
    - ☐ Not motivating and not fair
    - ☐ Don't Know

25. Have you been trained to deliver Long Acting Reversible Contraception (LARC) methods?
    - ☐ Yes
    - ☐ No

If you answered 'No' to Question #25, you may skip the final section of this survey.

Part 5: Integration of Long Acting Reversible Contraception methods (LARC) and CVCT in Under-5 and Family Planning Clinics

26. List any perceived challenges with integrating the new ZEHRP program combining LARC and CVCT services into Under-5 weekday clinic activities (resources, clinic space, staff):

    _____
    _____
    _____

27. List any perceived challenges with integrating the new ZEHRP program combining LARC and CVCT services into Family Planning weekday clinic activities (resources, clinic space, staff):

    _____
    _____
    _____