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Feasibility, acceptability, effect, and cost of integrating counseling and testing for HIV within family planning services in Kenya

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SUMMARY

Integrating counseling and testing (CT) for HIV into family planning (FP) services potentially increases the range of services available for FP clients, many of whom are at risk of STIs including HIV in high prevalence settings. Systematic evidence about offering CT in FP settings has remained extremely limited, despite the widespread interest in this model of FP-HIV integration. FRONTIERS supported the Division of Reproductive Health (DRH) and the National AIDS and STI Control Program (NASCO) of the Kenya Ministry of Health (MOH) to design, implement and compare two models of integrating CT for HIV within FP services in 23 health facilities in Nyeri and Thika Districts of Central Province, Kenya in terms of their feasibility, acceptability, cost and effect on the voluntary use of CT, as well as the quality of FP services. The study utilized a pre-post intervention design to obtain information from FP providers and their clients in 2006 to 2007. Data were collected through provider-client observations (554 at baseline and 530 at endline) and client exit interviews (552 at baseline and 530 at end line), pre and post intervention interviews and focus group discussions with health providers, and a health facility assessment of the readiness of facilities to offer HIV CT within FP services.

Introduction and implementation involved: (a) holding sensitization meetings at national, provincial and district levels; (b) reviewing and developing training materials; (c) application of the Balanced Counseling Strategy (BCS) Plus approach; (d) modification of facility registers to record the required data; and (e) training of health providers. The MOH provided all required equipment and supplies, including HIV rapid test kits and FP commodities.

Two models were pilot-tested. The “testing” model was implemented in Nyeri District, an area with relatively few VCT sites. In this model, FP clients were educated about HIV prevention generally, and CT in particular, and offered HIV CT during this consultation by the FP provider. The “referral” model was implemented in Thika district, an area with good accessibility to VCT services. In this model, FP clients were educated about HIV CT, and those interested were instead referred to a specialized CT service, either within the same facility or to another CT service (at another health facility or a stand-alone VCT center).

The study demonstrated that both models were feasible and acceptable to providers and to clients as means of integrating and linking HIV prevention counseling, condom promotion and counseling and testing with FP services, and are effective in increasing quality of care and service utilization. Specific findings showed that:

Integrating counseling and testing for HIV into FP services is feasible and acceptable: The majority of facilities had the capacity to integrate HIV prevention counseling and provision of or referral for CT services within existing FP services. Provision of both services jointly was perceived by clients to be beneficial and attractive and was welcomed by providers as an opportunity to provide a comprehensive service that better meets their clients’ needs. Existing differences between clinics in each district meant that some were better prepared than others to offer integrated services.

Quality of family planning counseling improved: Significant improvements were observed in the quality of FP counseling and in the rapport established with clients in both models. Discussion of reproductive intentions remained a weakness however.

Quality of counseling on STI/HIV issues improved: Levels of counseling on STI/HIV issues were low at baseline. After introduction of the BCS Plus approach, there were marked increases in discussions about STIs and HIV/AIDS generally and about the risk factors, but discussions of the client's personal sexual history and behaviors remained low.

Counseling on condoms and dual protection and their use improved: Condoms were rarely mentioned or discussed at the baseline, especially in Thika district. Training and use of the BCS Plus significantly increased discussions around condoms and their use. Reported use of condoms at last sex, in last month, and with another contraceptive method all increased significantly.

Counseling on HIV CT increased during FP consultations: One of the focus items of the intervention was to increase discussions about HIV counseling and testing during the FP consultations. At baseline, the proportion of consultations in which HIV CT was mentioned was already quite high, at 39 percent overall. Introduction of the intervention led to substantial increases, with HIV CT being mentioned in 88 percent of all consultations at endline. Discussions of the client's serostatus increased from 24 to 81 percent of consultations.

Use of the BCS Plus approach significantly improved the quality of integrated services: Summary scores were calculated for 27 items that providers were trained to cover when providing integrated services. The mean summary scores for those consultations when the BCS Plus approach was used were much higher (18.86) than for consultations when it was not used (12.19), clearly indicating that the BCS Plus approach is an effective means for improving the quality of counseling when providing integrated services. The approach was particularly effective in Thika district, where quality of care scores almost doubled when it was used.

Clients' offered and obtaining HIV CT increased: Approximately two-thirds of all new clients had ever had an HIV test, and this did not change over time, nor was there any difference between the districts, suggesting that there were no external influences during the study period. Most repeat clients had been exposed to the interventions and at endline there were significant increases in the proportions reporting ever been tested after the intervention (from 43% to 67%), and especially among those exposed to the testing model. There were substantial and significant increases in the proportions of clients offered HIV testing during the consultation, from one percent at baseline to 39 percent (repeat) and 48 percent (new) at endline. Providers implementing the testing model were more likely than those implementing the referral model to offer HIV testing, perhaps because they were able to offer the test themselves. For both models, the proportions of new clients being offered HIV testing (34% – 74%) were higher than for repeat clients (27% - 56%), which may be because the majority of repeat clients use injectables and pills, and so the provider may have assumed that the client had been offered testing previously. Overall, 50 – 72 percent of FP clients who were offered HIV testing accepted to have a test. Repeat clients and those attending referral model clinics were more likely to accept a test, which may suggest a preference for being tested anonymously at another site. The proportions of all FP clients actually having an HIV test after the FP consultation were 20 percent in the referral model and 35 percent in the testing model, with little difference between new or repeat clients. Overall, approximately one-third of those choosing to have an HIV test had never had a test

before; this proportion increased to one half for those attending referral model clinics. These data clearly indicate that both models are effective in substantially increasing the number of women accessing HIV counseling and testing, including many women who had never before had a test, through offering the service during FP consultations.

Incremental costs for integrating CT into FP services are affordable: On average, the additional time required during an FP consultation to provide the CT service was reasonable – 3.03 minutes for the testing model (from 12.4 to 15.4 minutes) and 4.18 minutes in the referral model (from 13.2 to 17.4 minutes), and the additional costs per FP client for this time were affordable, at \$0.41 for the testing model and \$0.24 for the referral model. For planning scaling-up of the testing model, the estimated incremental cost per FP client who is also counseled and tested for HIV ranges from \$5.60 (hospital) to \$9.53 (dispensary). This compares favorably with an estimated cost per client at stand-alone VCT sites of \$27.

Drawing from the lessons learned, the key programmatic recommendations for institutionalizing and scaling up this approach are:

- Ensuring that national, provincial and district level managers and trainers from both DRH and NASCOP lead activities builds capacity for introducing new service delivery protocols.
- District and facility action plans can ensure resource mobilization and secure commitment to providing integrated services.
- The Balanced Counseling Strategy Plus approach and tools has enhanced the range of services offered to FP clients and significantly improved the quality of care.
- On-the-job updates by MOH trainers rapidly expanded the number of health providers able to provide HIV CT for FP clients, but for sustainability the existing FP service delivery protocols need to be reviewed and revised to integrate the HIV service procedures.
- Continuous availability of both FP and HIV CT commodities ensured an attractive and accessible service.
- Both models are effective in increasing the number of women testing for HIV, both for the first time and for a repeat test.
- Clinics that can offer HIV testing on-site should also consider offering clients the option of being referred elsewhere for the test, given the evidence suggesting that anonymity is important for these FP clients who may meet the same provider on several occasions.

The preliminary findings and lessons learned were communicated to key stakeholders in August 2007. Drawing on this evidence, the DRH and NASCOP recommended that integration of HIV CT within FP services should be adopted, especially using the testing model where possible, and scaled up nationwide. A meeting in September 2007 planned for national and provincial-level training of trainers (TOTs). By end of October 2007, about 40 provincial-level TOTs from the remaining seven provinces had been trained by NASCOP and DRH. By mid-July 2008, the USAID-funded APHIA II partners had supported the Provincial Health Management Teams to train 93 providers in Central province and 33 providers in Nairobi province. By the end of 2008, Nairobi province plans to train a further 90 providers, Eastern Province will train a further 20 TOTs and 200 providers, and Coast Province will train 120 providers. Lessons from this study have been presented at several national and international workshops and conferences.

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ACRONYMS AND ABBREVIATIONS

AIDS	Acquired Immune Deficiency Syndrome
ARV	Antiretrovirals
BCS	Balanced Counseling Strategy
CT (C&T)	Counseling and Testing (for HIV)
DASCO	District AIDS Control Program
DHMT	District Health Management Team
DP	Dual Protection
DRH	Division of Reproductive Health
FGDs	Focus Group Discussions
FP	Family Planning
HIV	Human Immunodeficiency Virus
IUD	Intra-Uterine Contraceptive Device
KDHS	Kenya Demographic and Health Survey
KEMSA	Kenya Medical Supplies Agency
MOH	Ministry of Health
NASCOP	National AIDS Control Program
OPD	Outpatient Department
PASCO	Provincial AIDS Control Program
PEPFAR	President's Emergency Plan for AIDS Relief
PGH	Provincial General Hospital
PHC	Primary Health Care
PHMT	Provincial Health Management Team
PMTCT	Prevention of Mother to Child Transmission (of HIV)
RH	Reproductive Health
RHTS	Reproductive Health Training and Supervision
RTI	Reproductive Tract Infections
STI	Sexually Transmitted Infections
VCT	Voluntary Counseling and Testing (for HIV)
WHO	World Health Organization

INTRODUCTION

Background

In Kenya, HIV prevalence rates are high in the general population (estimated at 6.7 percent in 2003) but uptake of voluntary counseling and testing for HIV (VCT) remains low at 13 percent (KDHS, 2003). The 2003 Kenyan DHS found that women were less likely to have heard of VCT (48 percent) and less likely to have used a condom in their last high risk sex encounter (24 percent) than men. Condom use as a contraceptive method was reported to be low at 10.5 percent (KDHS, 2003). Almost 40 percent of women in the reproductive age group are using family planning (FP) services, and most users (58 percent) obtain their method from public sector health facilities. The majority use the injectable or pill, methods that require frequent visits to clinics (KDHS, 2003) and do not protect against HIV and STI acquisition. Approximately 20 percent of births are unwanted and 25 percent are mistimed.

Despite this evidence, relatively little attention has been paid to the opportunities of offering HIV counseling and testing (CT) within the context of other reproductive health (RH) services attended by people at risk of HIV. Thus, integrating counseling and testing for HIV within FP services potentially increases the range of services available for FP clients, many of whom are at risk of STIs including HIV. Evidence of the feasibility, acceptability, cost and effect of offering counseling and testing in FP settings has over the years remained limited.

At present, the policy environment is conducive to the integration of services and the relevant departments within the Kenyan Ministry of Health (MOH) work together to seek common benefits. The National Reproductive Health Strategy (1997-2010) highlights integration of services and quality of care as key components of its strategy (MOH, 1996). The current National Health Sector Strategic Plan (NHSSP II) 2005-2010 also highlights integration of HIV/AIDS programs into maternal and child health as a key output to be achieved during the plan period (MOH, 2005). In addition, the MOH policy on reproductive health emphasizes the need for integrating RH and HIV/AIDS information and services. The Ministry of Health draft strategy document entitled “Strategy for the Integration of Voluntary Counseling and Testing Services and Family Planning Services” defines integration as “the incorporation of *some* or *all* of the different FP services into existing VCT services and vice versa (MOH, 2005).”

A study on integration of HIV and FP services in Ethiopia (Bradley et. al., 2006) categorized integration into three levels, facility integration (co-location of HIV and FP services within the same facility), room integration (offering HIV and FP services in the same room), and counselor integration (offering HIV and FP services by same counselor in one consultation). The study showed that, relative to co-locating services in the same facility, those integrating services at room and counselor-levels were 1.9 – 7.2 times more likely to serve clients wanting HIV testing.

Justification

The MOH draft strategy on integration of VCT and FP services states that “A major concern of the Kenya government, program implementers, and donors is that the VCT program is evolving as a parallel program to other efforts, especially those of the MOH that are aimed at decentralizing and integrating services.” To date, only models of FP integration into VCT

services have been developed and tested in Kenya (Reynolds et al, 2006). Integration of CT into FP has not yet been addressed and so evaluation of alternative models for this approach will assist the MOH to make programmatic decisions on cost effective approaches to improving uptake of HIV CT and improving the quality of FP services. To review evidence and provide guidance on FP-HIV integration broadly, the MOH has established an RH-HIV sub-committee within the RH-HIV Working Group, chaired jointly by the National AIDS and STI Control Program (NASCOP) and the Department of Reproductive Health (DRH), and reporting to the Head of the Department of Preventive and Promotive Services. The main aim of the committee is to develop an integrated RH/HIV program that will ensure improved coordination and collaboration among key agencies and organizations offering RH and HIV information and services.

Models tested

Two models were developed and tested in response to the MOH's interest in being able to offer different models of integration of CT into FP, depending on the context in which CT is already available. Both models include common components of a strengthened FP consultation plus counseling about and an assessment of STI/HIV risk behaviors. The "referral" model then provides information about HIV CT to all FP clients, with referral to existing VCT services elsewhere for those interested in being tested. This model is most relevant for those facilities in areas that already have a number of VCT services accessible to the clients and that do not necessarily need to offer HIV CT on-site; this model was tested in Thika district. The "testing" model also provides information on HIV CT, but then offers on-site testing and post-test counseling by the FP provider. This model is most relevant for facilities located in areas that do not have many VCT sites available and was implemented in Nyeri District.

OBJECTIVES

The overall objective of the project was to assess the feasibility, acceptability, effect and cost of integrating VCT information and services into FP services. The specific objectives were:

1. To develop and implement a model of integration that educates FP clients about VCT and offers them counseling and testing for HIV within the routine visit by a FP provider.
2. To develop and implement a model of integration that educates FP clients about VCT and refers interested clients for testing and post-test counseling to a specialized VCT service.
3. To describe the feasibility of implementing each of the two models and provider perspectives on their implementation.
4. To assess the implementation of the two models in a number of health care delivery settings in terms of their acceptability to clients, effectiveness in increasing VCT uptake, and incremental costs.
5. To assess the effect of integrating VCT on the quality of FP services received.
6. To disseminate and utilize results to create the conditions for scale up.

DEVELOPMENT AND IMPLEMENTATION OF THE TWO MODELS

Sensitization of the National, Provincial and District teams

Following discussions at the national level with the FP Working Group and the VCT Integration Sub-committee, a sensitization meeting on integrating VCT activities into FP services was held in Nyeri in November 2005. Key stakeholders included the Provincial Health Management Team (PHMT) of Central Province, the District Health Management Teams (DHMTs) from Thika and Nyeri Districts, NASCOP, DRH and FRONTIERS. The purpose of the meeting was to discuss the national VCT/FP integration strategy, the proposed models of integration, planning issues and data collection requirements. During the meeting, members of the provincial and district teams discussed: the current number of VCT sites, strengths and opportunities for the proposed project, challenges, solutions and their expected roles and responsibilities. An outcome of this meeting was the decision to proceed with developing and comparing two models.

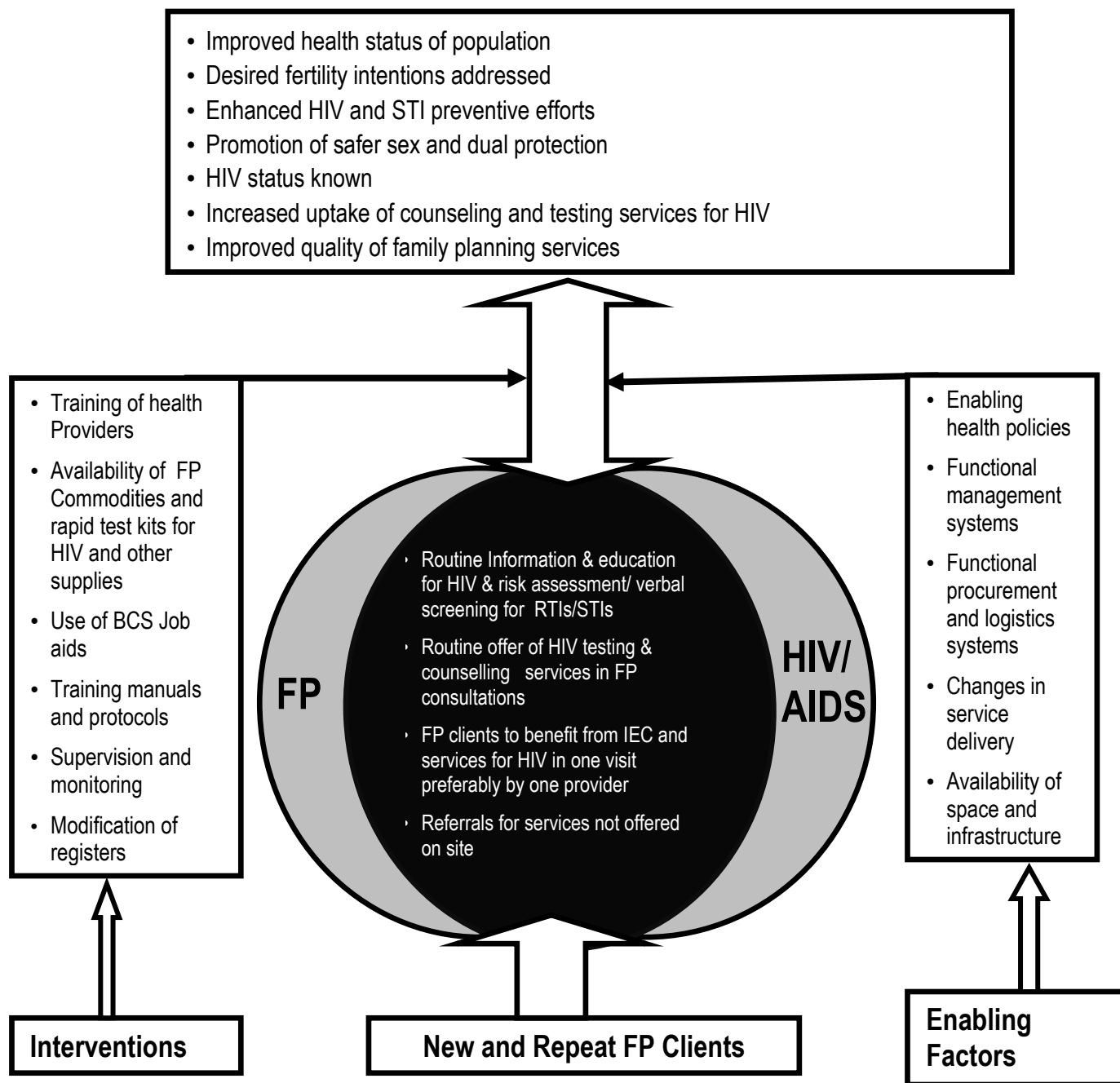
Models to be compared

The conceptual framework on which the two models were based is described in Figure 1 below.

The Referral Model: This model was implemented in Thika district, where the majority of facilities already had on-site VCT services and there were a number of stand-alone VCT sites. Family planning providers were trained to provide standard HIV/STI prevention and VCT awareness information, followed by individual risk assessment and a strengthened focus on promoting dual protection. HIV/STI prevention information was also incorporated into group health talks that usually take place at all clinics. All clients expressing an interest in VCT were referred internally to the on-site VCT service or externally to VCT services at other facilities for pre-test counseling, testing and post-test counseling. Health providers had a list of clinics and centers providing VCT services within the district, which was shared with the clients.

The Testing model: The testing model was implemented in Nyeri district, where on-site VCT services were not readily available. Providers from health centers and dispensaries (all without on-site VCT facilities) and from the Provincial General Hospital in Nyeri (which had on-site VCT) were trained to provide standard HIV/STI prevention and VCT awareness information, individual risk assessment and dual protection during all FP consultations. Clients who expressed an interest in VCT during the consultation were offered pre-test counseling, testing, and post-test counseling by the FP provider herself, either on the same day or at a later date. Clients were asked whether they preferred their FP provider to test them or if they wanted to be referred to another VCT service. HIV-positive clients were referred for follow-up and treatment in appropriate health facilities that had comprehensive care centers (CCCs).

Figure 1: Conceptual Framework for Integrating HIV CT into FP Services



Key: FP= Family Planning Information and Services; HIV/AIDS= Information and Services. The two services overlap in the shaded area which represents additional services that an FP client receives.

Training materials

National policies and guidelines relevant to HIV testing and family planning were reviewed in December 2005, including: FP Guidelines for Service Providers 2004; National Guidelines on Reproductive Tract Infection Services 2006; National PMTCT Training Manual 2005; and the National Trainers Manual on Integrating FP into VCT (draft 2004). Subsequently three sets of training materials were developed between January and April 2006: a trainers' manual; a trainees' manual; and a national protocol. All topics in the training manuals have been prepared as PowerPoint presentations to standardize the training package for future use during scale-up. The review and development of these training materials involved many institutions, including DRH, NASCOP, PHMT Central, DHMTs (Nyeri and Thika) and FHOK among others. Revision of the training materials also took into account findings from the needs assessment.

Balanced Counseling Strategy Plus (BCS-Plus)

The Balanced Counseling Strategy (BCS) is a counseling approach that uses a toolkit consisting of several job aids to facilitate structured FP consultations. The BCS was developed and validated in Latin America by the Population Council (León, 1999 and León, et al. 2003)¹. This version of the BCS job aids was first adapted in South Africa for use in high HIV and STI prevalence settings, and then reviewed, modified and adapted by the trainers in Kenya. The modified version, referred to as BCS-Plus, seeks to improve the overall quality of FP services through increased choice and discussion of FP methods, strengthened integration of issues surrounding HIV and STIs into FP, increased discussion of dual protection, and improved prevention and control of RTIs/STIs among FP clients through early detection and management.

The modified BCS-Plus toolkit consists of a: (a) an algorithm to guide the provider through a semi-structured consultation; (b) a set of method-specific cards to facilitate counseling; and (c) brochures to be taken away by the client that describe the chosen method in detail.

Algorithm: The algorithm summarizes the key steps that a service provider should take to implement the BCS-plus during a counseling session. The steps are organized chronologically under three stages: Pre-choice; Method Choice; and Post-Choice. Each step describes the actions the provider needs to take or question s/he needs to ask. Depending on the client's response, the algorithm describes the following steps to take. The algorithm is described in Appendix 1.

Counseling cards: There are 14 counseling cards in the toolkit. The first card contains six questions that the service provider will ask to rule out if a client is pregnant. The 13 method-specific cards are used to help narrow down choice of the appropriate method for the client. Each method card has an illustration of the method on the front side of the card. The backside of the card contains a description of several basic attributes or characteristics of the method. This allows the client to get an idea about the method. An example is given in Appendix 2.

Brochures: The toolkit includes 13 brochures, one for each FP method. Each brochure contains general information on the FP method, limitations on its use, how to use the method, side effects,

¹ See: http://www.popcouncil.org/frontiers/bestpractices/BCSpag_082007.html.

other benefits, key points for follow-up, and warning signs for when to seek medical attention. An example of the FP method brochure for the IUD is given in Appendix 3.

Training Health Providers

A total of 75 health care providers, 47 in Thika and 28 in Nyeri, were trained. Implementation of the two models started in mid-May 2006 after the first group of trainees had qualified. Training focused on service integration, updates in FP method effectiveness and WHO eligibility criteria, RTIs and HIV, reproductive rights and informed choice and consent, safe sex and dual protection, values clarification, risk assessment and reduction, use of the BCS-plus, record keeping, logistics management and referral. Duration of the residential training was five days for the referral model and nine days for the testing model, which included an additional four days for training in HIV CT and conducting and interpreting rapid HIV tests. Trainers were drawn from DRH, NASCOP, AIDS & STDs Coordinator and RH Training and Supervision Coordinator, Thika and Nyeri DHMTs, and FRONTIERS. To facilitate sustaining implementation and effective program supervision and monitoring, the national level trainers teamed up with provincial and district level trainers. Trainers followed up providers who had completed the training to ensure that they started implementation of activities immediately after training.



Trainees practicing taking a blood specimen

Participants took part in pre and post training tests. There was a marked improvement for all the groups in post training test scores (Table 1). The higher average score in Nyeri is attributed to the fact that providers in this district had recently undergone updates in FP under the “Implementing Best Practices (IBP)” pilot project a few months before the start of the training program.

Table 1: Pre and post test mean scores for participants attending training sessions by district

District	Name of group	Group size	Pre-test mean score	Post-test mean score	% increase in mean scores
Nyeri	April 06 Group I	12	63%	84%	33%
	May 06 Group II	16	63%	80%	27%
Thika	May 06 Group I	22	56%	73%	30%
	Group II	24	60%	74%	22%

Half of the participants rated the training to be very good, 30 percent it as good, while 18 percent rated the training as satisfactory, considering the following factors: content, materials and use of visual aids, trainers’ presentation and practice sessions. Over half (58%) of the participants said that the length of training was just right, while 42 percent thought it was too short. A number of participants recommended that the time allocated for the counseling and testing sessions should be increased to allow for more practice sessions.

Towards the end of the training, each participant developed an action plan that addressed preparatory steps and specific obstacles that needed to be tackled at their facility to be able to

“fast-track” implementation of the activities. The action plans addressed five areas: identify problems; steps required to tackle the problems; the resources needed to tackle the problems; the persons responsible for tackling the problems and the expected initiation or completion dates for the planned activities.

Strengthening basic supplies and commodities

Planning for and procurement of key supplies, such as rapid test kits for HIV and reagents and FP commodities, was undertaken with district-level mechanisms for sourcing, storage, distribution and replenishment of supplies. NASCOP is responsible for provision of HIV test kits and the DRH for provision of FP commodities. In anticipation of starting up activities, both DHMTs were able to liaise with the PHMT, DRH and NASCOP, as well as the Kenya Medical Supplies Agency (KEMSA), to place orders for the requisite supplies. Study facilities embarked on implementation of activities immediately after receiving the basic supplies and commodities from the DHMTs.

Strengthening routine data collection on FP and VCT services

To ensure adequate monitoring of the intervention, the existing FP registers were reviewed. Additional information required to monitor implementation of the intervention was identified and key indicators (e.g. number of clients counseled, tested, referred and their HIV sero-status) were manually added to the registers in the intervention clinics before the new activities began. Collection, review and use of routine data from both FP and VCT registers were the key mechanism used to monitor implementation. Clinics and VCT centers were asked to keep records of the numbers of clients referred. The majority of health facilities in the referral model established systems for identifying the number of VCT clients who had been referred from FP clinics; examples included creation of additional columns in the register or inserting the letters “FP” against the names of clients who had been referred from FP clinics.

To better understand patterns of VCT utilization, clients in both models were given a set of VCT vouchers during their FP visit. The vouchers had two parts; the front part contained information about the referring institution, while the back side contained information about the receiving institution. Information on the referring institution included: name of district, name of issuing health facility/clinic, date of issue, whether client discussed with provider risk factors for STIs, HIV/AIDS and unintended pregnancy and whether client was new or repeat. Information on the receiving institution where the client went for the test included: date of test, name of testing health facility, whether the test was performed by FP provider or not, whether client received results or not, sex of the client and age in complete years. Once completed, the voucher was handed over to the midwife in charge of the FP clinic who then filed it. Information on the number of vouchers received was then compiled on monthly basis and handed over to the DHMT who then forwarded to the national level project team alongside information on other aspects of the project.

In both sites, activities were monitored and supervised using information collected from registers on FP and VCT utilization. In Thika district, additional information was collected on referrals. Project progress was reviewed on monthly basis by the respective DHMTs. Challenges arising were tackled at such meetings and during the monthly supportive supervision sessions.

EVALUATION METHODS

Study design and selection of sites

A pre-post intervention design without a control group was used. Study participants were new and repeat FP clients and health providers (nurses and clinical officers) working in FP clinics. The study was conducted in two districts of Central Province, Nyeri and Thika, which represent examples of high and low availability of VCT services at the district level. At the time of designing the study, Nyeri District had three sites offering VCT while Thika District had 16 sites, mainly situated within existing health care facilities. The implementation phase lasted ten months, from May 2006 to February 2007.

Health facilities for piloting the two models were selected following consultations between the two relevant divisions of the MOH, the Department of Reproductive Health (DRH) and the National AIDS and STI Control Program (NAS COP), the provincial and district health management teams and FRONTIERS. A total of 23 public health facilities were selected based on the following criteria:

- Adequate client volume (a minimum of 100 combined new and revisit clients per month);
- Minimum of two providers qualified in and currently providing FP services;
- Hospitals and health centers in Thika district were required to have VCT on site;
- Facilities in Nyeri district should not have VCT on site.

Of the 23 facilities selected, 14 implemented the referral model in Thika District and nine were selected to implement the testing model in Nyeri District. The selected facilities are listed in Appendix 4. In addition to fulfilling the criteria above, the DHMTs ensured that the selected facilities were evenly distributed across the administrative divisions to increase geographical coverage of health facilities. In Thika, the 14 sites included two hospitals, eight health centers and four dispensaries². In Nyeri, the nine sites included one hospital, four health centers and four dispensaries.

Health facility assessment and training audit

A health facility assessment was conducted in all 23 facilities in March 2006 by experienced health providers who had been trained for two days to undertake the exercise. The assessment involved a review of records, interview with health facility in-charges, and an inventory of equipment and supplies available for providing FP and counseling and testing services. A training audit was also undertaken to assess the number and skills of health staff available.

Focus group discussions with FP providers

Pre and post-intervention FGDs were conducted in March 2006 and in April 2007 to assess the acceptability of the interventions to providers in both districts. One group of health providers from each district participated in the FGDs. In the pre-intervention FGDs, providers were

² A dispensary usually offers a limited range of curative, preventive, promotive and rehabilitative care. On average, dispensaries are staffed with 2-3 nurses. Dispensaries often lack a laboratory, maternity ward, inpatient facilities and staff houses. A health centre (with an average staff of 5-8 health providers) offers a wider range of services, including a laboratory, maternity services, inpatient facilities etc.

selected from non-study facilities, whereas providers in the post-intervention FGDs were selected from all the study sites. The FGDs were carried out by two social scientists with the help of a reproductive health trainer from the MOH. Providers were asked to comment on challenges in providing FP, their perceptions of the quality of care, current provision of services, contribution of FP services in combating HIV and STIs, cost of FP/STI services, and the acceptability of integrating counseling and testing services for HIV within FP services. The characteristics of health providers who participated in the discussions were similar at baseline and endline.

Focus group discussions with FP clients

FGDs with FP clients were held in each district (one at a health center and one at a dispensary) before and after the interventions. Participants in the pre-intervention FGDs were selected from clients attending FP services in four randomly selected non-study facilities. Post-intervention FGDs were held in four facilities among those that had implemented the interventions, two in Nyeri and two in Thika. Clients were asked to comment on the current challenges to provision of FP care, their perception on the quality of care, access to VCT services, factors affecting VCT uptake and access and the acceptability of integrating counseling and testing services for HIV within FP services.

Observations of provider-client interaction

In each of the 23 facilities, a trained nurse observed approximately 24 consecutive new and repeat FP client-provider interactions. A total of 554 observations were completed at baseline (April 2006) and 530 at endline (March 2007) (see Table 2). During the observation, the nurse used a structured checklist with a series of standard items to record the technical competence of the provider as well as the quality of care received.

Client exit interviews

Clients exiting the observed FP consultations were then requested to be interviewed by trained research assistants using a structured questionnaire. A total of 552 FP client exit interviews were completed at baseline and 530 FP interviews completed at endline (see Table 2). Clients were asked questions relating to the acceptability and quality of services they had just received and their experiences with testing for HIV or intention to test, dual protection, behavior during the period, experience of the service, changes in risk perception, and partner notification and testing.

Table 2: Sample sizes for client-provider observations and client exit interviews

		Number of clients	
		Baseline	Endline
Client-provider observations	Thika	354	317
	Nyeri	200	213
Client exit interviews	Thika	346	316
	Nyeri	206	214

Measuring incremental costs of implementing each model

The costing framework for integrating CT for HIV into FP services took into account only the additional costs incurred for integrating the additional services; see Appendix six for a detailed description of the methodology used. The incremental costs considered in this report are confined to the service delivery phase only, although the report also shows the costs incurred during the planning phase and training phases. Retrospective data (pre-intervention) and prospective data (post-intervention) were collected from the 23 facilities. Data were obtained from: key informant interviews, review of administrative data, FP utilization registers and observation of the time each provider spent with clients. During the health facility assessment, information on costing was obtained from facility in-charges and KEMSA on HIV equipment and supplies. Costing information covered the quantities of supplies used before and during intervention period. For each item, the price per unit of pack or quantities used was obtained. The total quantities used were multiplied by the respective unit cost of the supplies used to obtain the total cost of the various interventions.

Information on labor costs was obtained by reviewing employment details of the staff observed during client-provider interactions. Details included job title, days worked per year, hours worked per year, basic monthly gross salary and monthly allowances for housing, medical, leave, non-practice, hardship and other monthly benefits.

Data management and analysis

Data entry screens for all quantitative data were set up in Epidata and double entered. Analysis was done in Stata 9.2. Client characteristics were compared at baseline and any differences observed were adjusted for when making comparisons post-intervention. Qualitative data were analyzed manually using content analysis techniques. Ethical considerations including informed consent for study participants, informed consent for VCT clients and issues pertaining to confidentiality, among others, were observed and adhered to throughout the study.

FINDINGS

Readiness to offer integrated services

At baseline, the majority of facilities had the minimum basic equipment, supplies, infrastructure and staff to carry out integration activities in both models (Table 3 and Appendix 5). The results are expressed in terms of mean percentage scores and were derived from individual percentage scores against all the items listed under each category in Appendix 5. There were variations; for instance, whereas all facilities had BP machines, stethoscopes, and examination couches, other equipment such as port light, display board for FP methods, sterilizing drums were only available in approximately 50% of the facilities across the two models. Overall, clinics implementing the testing model had a slightly higher mean readiness score (74%) than those in the referral model (68%). As shown in Appendix 5, although most facilities had short-term FP methods available, they were likely to have had stock outs for implants, emergency contraceptives, and IUDs. In addition, provision of surgical contraception (female mini laparotomy, tubal ligation and vasectomy for males) was quite low, especially in Thika District.

Table 3: Availability of basic equipment, supplies, infrastructure and services for FP and HIV/STIs

Category	Testing model n=9 (%)	Referral model n=14 (%)	Pooled n=23 (%)
Availability of equipment	76	74	74
Availability of FP supplies	52	43	46
Availability of HIV/STI supplies	81	80	81
Availability of infrastructure	83	84	84
Provision of FP services	73	56	63
Provision of HIV/STI services	77	71	73
Overall mean score	74	68	70
Staff			
Average No. of Enrolled nurses / midwives working in the MCH/FP unit	4	7	6
Average number of Registered nurses/ midwives in MCH/FP unit	1	1	1

Acceptability of services to clients

Comments by clients at the endline about the quality of FP services suggests that there was improvement over the intervention period as there were fewer complaints, especially about the shortage of FP commodities. Despite the improvements, clients at the endline made suggestions for further improvements:

“Would like to see additional providers due to high number of clients” Client, Nyeri District.

“FP commodities stock-outs cause some clients to switch methods” Client, Thika District.

“FP services should be made free of charge since some clients are not able to meet the cost of these FP services and this is a service all women require.” Client, Thika District.

Respondents, especially in Thika district, said that they were told where to get VCT services and also received information from their provider on VCT services in general, such as the importance of knowing own HIV status. In both districts, there was a marked reduction in the number of clients at endline who mentioned stigma and self-denial as issues that discourage people from going for VCT. At endline, clients appeared more concerned about meeting the needs of discordant couples: *“People are discouraged from going for testing because if one partner is positive and the other negative it causes separation.”* (Client, Thika district). The majority of participants in the testing model felt that the intervention improved access, as they were not required to travel to other health facilities to be counseled and tested for HIV.

During the baseline, the majority of clients expressed a willingness to go for VCT services. Some of them preferred attending VCT in far and secluded places away from their homes. However, at endline, more clients (especially in the testing model) preferred to be tested in the same health facility as for FP services. Reasons included time saving and that only one provider need know their status. Many clients stated (at baseline and endline) that the availability of ARVs could alter the community’s perception and make more people go for VCT services.

Overall, participants said that it was a good idea to integrate counseling and testing within FP services. They liked the idea of the provider knowing their status and guiding them if positive on appropriate FP methods. However, there were mixed reactions about being referred elsewhere

for VCT services by an FP provider. Some felt that it was acceptable if the provider gives good reasons for referral. However, majority said they would prefer to be tested at their local clinic together with their partners.

“It is better for my FP provider to test me and know my status. I do not mind about the provider knowing my status so long as I get the services I require” Client, Nyeri District.

“It is a good idea to receive both counseling and testing and a method from our FP clinic”... if nurse knows our HIV status may guide us if positive on FP methods” Client, Thika District.

Exit interviews with FP clients revealed that integrating counseling and testing for HIV within family planning services was acceptable, with over 90 percent of all clients expressing satisfaction with the service received.

Acceptability to providers

Most providers were female and the mean age was 46 years in Nyeri District and 43 years in Thika District. At baseline, the main challenges cited by providers were irregular supply of FP commodities and shortage of staff in health facilities. At endline, the challenges mentioned were more to do with the effects of implementation of integrated activities. These included increased waiting time for clients as consultations for integrated services take longer, difficulties in using the BCS-plus job aids, and a small number of partner vouchers returned to the facilities.

“Due to shortage of staff and the added HIV services the workload is high and this forces us to hold clients for long, which then causes a lot of complaints from them.” Provider, Thika District.

In both districts, providers suggested that the MOH deploys additional providers to address the issue of staff shortages. Providers also pointed out that although they are trying to integrate HIV and FP services, some of them do not have skills in counseling and testing as well as in the broader management of HIV positive clients, especially those requiring specific drugs:

“Clients on ARVs and TB are difficult to manage, especially if they have been on TB drugs and test HIV positive. In such cases, we do not know which drug to start on.” Provider, Thika District.

Providers indicated that they had adopted a number of strategies and coping mechanisms to maintain the quality of FP care provided to clients because of the shortage of commodities and human resources. In both districts, providers indicated that they reduce the VCT/FP consultation time by doing group counseling for pre-test counseling and only do individual counseling for the post-test counseling. In both districts, providers said that integrating counseling and testing for HIV within FP services has enabled many clients to access HIV/AIDS/STIs services and care, especially those who might have feared going to VCT sites. Condom use in particular is encouraged.

“We encourage those who test positive that they do not have to entirely give up their sex lives, but to strictly ensure that they use condoms to avoid re-infections and transmission of the virus.” Provider, Nyeri District

In both districts, providers indicated that the cost of accessing the two services was low enough to not prevent would-be clients from seeking the services. They said the use of the syndromic approach in managing FP clients with RTIs/STIs helps to lower the cost of providing services since laboratory tests are not required.

Overall, providers felt that it is feasible and acceptable to integrate counseling and testing for HIV within family planning services. The majority of providers felt that provision of integrated services was beneficial to both themselves and their clients. They also felt that integration had improved client-provider interactions, couple counseling, and male involvement in VCT/FP issues. Providers in Nyeri said that the testing model had empowered them with appropriate skills to counsel and test clients for HIV. Providers in referral model clinics in Thika recommended that the MOH allows them to have onsite counseling and testing services for HIV.

Characteristics of the FP clients

Table 4: Characteristics of clients by model

	Testing model (Nyeri)		Referral model (Thika)	
	Baseline n=214	Endline n=210	Baseline n=324	Endline n=310
Demographic and fertility indicators (from client exit interview):				
Age ≤ 20 years	4	5	4	5
Age 21 - 30 years	45	50	55	56
Age 31 - 40 years	38	37	31	30
Age ≥ 41 years	13	9	11	9
Median age	31 yrs	29 yrs	29 yrs	28 yrs
Lower primary school (1-4) and none	5	8	11	9
Completed upper primary school (5-8)	70	64	63	68
Completed Secondary School and above	25	28	26	23
Married/Cohabiting	96	94	95	96
Median number living children	3	2	2	3
Want more children	37	36	43	41
Do not want more children	58	59	50	58
Uncertain	5	5	3	1
Of those wanting more, want within 1-2 years	23	25	13	10
Purpose and outcome of visit (from client-provider observation)				
New user of FP method	14	13	19	16
Repeat user of FP method	86	87	81	84
FP method used on day of visit				
Injectable	71	79	69	77
Pill (any type)	23	17	26	4
Condom	1	2	1	18
IUD	4	3	1	2
Others	1	0	3	0
Significant at *p<0.05; **P<0.01				

As can be seen in Table 4, most clients were married, around 30 years old, had two or three living children, and had completed 5 – 8 years of schooling. There were some differences between the districts in terms of fertility intentions, with those in Nyeri less likely to want more children, and for those who did want another child, women in Nyeri were more likely to want to deliver within two years. Between 13 – 19 percent of clients were ‘new’, that is obtaining family planning from the clinic for the first time. Reflecting the national situation in Kenya, the vast majority of clients were using hormonal contraception, mostly injectables. This is despite the fact that well over half of the FP clients do not want any more children at all, and of those that do want more, 80 percent would like to wait at least three years. The low levels of IUD use, a method well-suited to this population, also reflect national norms.

Quality of FP Counseling

After updating providers in FP and orienting them in the BCS-plus approach, significant improvements were observed in FP method counseling in both models across most of the six indicators that were assessed (see table 5). These indicators were chosen as they represent the key issues usually considered necessary for good quality of counseling on family planning (e.g. Bruce 1990). To assess the magnitude of overall changes in the quality of FP counseling within and between the two models, summary scores were developed by aggregating the mean scores of the six indicators for each individual observed, giving a scale ranging from 0 (lowest quality) to 6 (highest quality).

Table 5: Proportions of consultations in which FP issues were discussed

<i>Proportion of consultations in which provider:</i>		Testing Model (Nyeri)		Referral Model (Thika)		Pooled Sample	
		Baseline	Endline	Baseline	Endline	Baseline	Endline
		(N=214) %	(N=210) %	(N=324) %	(N=310) %	(N=538) %	(N=520) %
1	Discussed reproductive intentions	13	14	15	40**	14	30**
2	Discussed previous use of FP	66	79**	66	78**	66	79**
3	Discussed 2 or more methods	43	53*	45	86**	44	73**
4	Provided with choice regarding preferred method	76	95**	92	93	85	93**
5	Discussed how chosen method works	34	42	54	78**	46	64**
6	Explained advantages/disadvantages of chosen method	25	48**	50	77**	40	65**
Total Score (0-6)		2.52	3.23**	3.16	4.41**	2.91	3.93**

* Significant at $p < 0.05$; ** $P < 0.01$

The summary scores show that the increase in quality was higher in the referral model clinics, although these did start at a higher level of quality than the testing model clinics. The greater increase in this group may be due to the fact that providers in the referral model clinics (Thika district) were much more likely (75%) to have been observed using the BCS-plus approach during consultations than providers in the testing model clinics (41%) (Nyeri district), supporting

findings from earlier studies that the BCS-plus does have an effect on quality of FP counseling. Overall, the pooled sample shows that use of the BCS-Plus increased mean number of critical actions from approximately three to four per consultation. The weakest aspect remained discussions of fertility intentions, with providing clients with a choice of methods consistently being the strongest aspect.

Significant improvements were also noted with regard to the rapport established between provider and client (see table 6), although interestingly the improvements were greater in the testing model clinics than the referral model clinics. Some indicators (e.g. privacy and the use of client records during consultation; not included here) did not improve, but were already high at baseline.

One of the biggest improvements was in the proportion of consultations in which the provider spent more than 15 minutes with their client. At baseline, the median consultation time for clients attending the referral and testing models was 12 and 10 minutes respectively; at endline, this had increased to 15 and 14 minutes respectively, regardless of whether the clients were repeat or new. The median consultation time for new clients at endline was 18 minutes in the referral model and 20 minutes in the testing model. The median consultation time for all clients in the testing model (repeat or new) who were actually tested was 17 minutes, which means that the addition of the test increases the consultation time by an average of seven minutes.

Table 6: Proportion of consultations in which client rapport established

<i>Proportion of consultations in which provider:</i>		Testing Model (Nyeri)		Referral Model (Thika)		Pooled Sample	
		Baseline	Endline	Baseline	Endline	Baseline	Endline
		(N=214) %	(N=210) %	(N=324) %	(N=310) %	(N=538) %	(N=520) %
1	Client greeted warmly	88	95**	85	94**	86	94**
2	Discussed medical conditions	33	59**	54	40	46	48
3	Asked if client understood information	74	89**	83	90**	79	89**
4	Encouraged client to ask questions	67	94**	71	88**	69	90**
5	Used client's name	61	72*	56	63	58	67**
6	Help in decision-making	53	77**	85	85	73	82**
7	Consultation time > 15 minutes	29	40**	37	48**	33	45**
Total Score (0-7)		4.05	5.24**	4.71	5.02*	4.44	5.11**

* Significant at p<0.05; **P<0.01

Quality of STI/HIV Counseling

Overall, improvements in the quality of counseling for STI/HIV risk factors were observed in both models for the set of factors described in Table 7, but the low summary scores of around two out of five key actions being undertaken with each client after the intervention indicate that this is an area that needs more attention.

Table 7: Discussion of STI/HIV issues with FP clients

<i>Proportion of consultations in which provider:</i>		Testing Model (Nyeri)		Referral Model (Thika)		Pooled Sample	
		Baseline	End line	Baseline	Endline	Baseline	Endline
		(N=214) %	(N=210) %	(N=324) %	(N=310) %	(N=538) %	(N=520) %
1	Discussed client history of STI symptoms	18	13	11	38**	14	28**
2	Discussed number of sexual partners	5	11*	1	19**	3	16**
3	Discussed STI/HIV/AIDS	48	84**	30	77**	37	80**
4	Discussed STI/HIV/AIDS risk factors	39	52**	22	69**	29	62**
5	Tells client STI increase risk of HIV	14	7*	20	43**	17	28**
Total Score (0-5)		1.24	1.68**	0.83	2.46**	1.00	2.14**

* Significant at $p < 0.05$; ** $P < 0.01$

Substantial improvements were made in the clinics in Thika district, which may reflect greater use of the BCS-Plus approach, as noted above. Providers seem to be most comfortable having general discussions about STIs/HIV and to a lesser extent discussing some of the risk factors, but counseling about the client’s personal behaviors (e.g. history of symptoms or number of sexual partners), remains extremely low. This demonstrates once again the often observed reluctance of FP providers to engage their clients in discussions of their personal sexual behavior.

Quality of counseling about condom use

As shown in Table 8, all indicators relating to counseling on dual protection improved significantly after introducing the BCS-Plus approach, and particularly in the referral model clinics in Thika district. At baseline, this had been a particularly weak aspect of counseling, with average summary scores of 0.51 and 0.8 items per client. Although there is still much improvement needed, the increase to 2.4 items per client on average, including 2.88 in Thika district, indicate that providers are willing and able to discuss condom use in a dual protection perspective with FP clients.

In most facilities, condoms have been placed in dispensers and clients are expected to take themselves from these dispensers. The proportion of consultations in which a provider was observed giving male condoms to clients improved significantly after the intervention, however, from two percent at baseline to eleven percent at endline; there was also a slight increase in the provision of female condoms from none at all at baseline to two percent of consultations at endline. These proportions were higher in the referral model.

Table 8: Counseling and provision of condoms

<i>Proportion of consultations in which provider:</i>		Testing Model (Nyeri)		Referral Model (Thika)		Pooled Sample	
		Baseline	Endline	Baseline	Endline	Baseline	Endline
		(N=214) %	(N=210) %	(N=324) %	(N=310) %	(N=538) %	(N=520) %
1	Explains condoms protect against STIs/HIV and pregnancy	22	33**	11	57**	16	48**
2	Encourages use of condoms with another FP method	32	50**	12	71**	20	62**
3	Explains how to use a condom	9	33**	12	62**	11	51**
4	Emphasize correct/consistent condom use	10	30**	9	53**	9	43**
5	Explains how to negotiate condom use	8	23**	7	46**	7	37**
Total Score (0-5)		0.80	1.70**	0.51	2.88**	0.63	2.40**

* Significant at $p < 0.05$; ** $P < 0.01$

Quality of counselling on HIV C&T

Training, encouraging and supplying job aides for providers to discuss HIV CT with their FP clients has clearly had a substantial effect on their consultations. As Table 9 shows, the summary scores increased from approximately one item to almost three out of four items per client. After the intervention, counseling and testing for HIV was mentioned in almost 90 percent of consultations overall, and the client's own serostatus was discussed.

Table 9: Counseling on CT services

<i>Proportion of consultations in which provider:</i>		Testing Model (Nyeri)		Referral Model (Thika)		Pooled Sample	
		Baseline	End line	Baseline	Endline	Baseline	Endline
		(N=214) %	(N=210) %	(N=324) %	(N=310) %	(N=538) %	(N=520) %
1	Discuss HIV serostatus	30	77**	20	83**	24	81**
2	Mentions VCT	42	82**	37	92**	39	88**
3	Discuss what test tells client	36	66**	31	57**	33	61**
4	Explain about window period	1	53**	7	31**	5	40**
Total Score (0-4)		1.10	2.78**	0.95	2.64**	1.01	2.70**

* Significant at $p < 0.05$; ** $P < 0.01$

Aggregate scores for quality of care

To evaluate the overall effect of the introduction of the BCS-Plus approach on the quality of care received in both the testing and referral models, Table 10 summarizes the mean scores for each of the components assessed and presents a summary aggregate score for each model / district and

for the total sample. At baseline, providers were observed counseling FP clients on approximately ten out of the 27 items selected to measure quality of care. At the time of the endline, this had increased significantly, to almost 15 items in the Nyeri testing model clinics and to almost 17.5 items in the Thika referral model clinics.

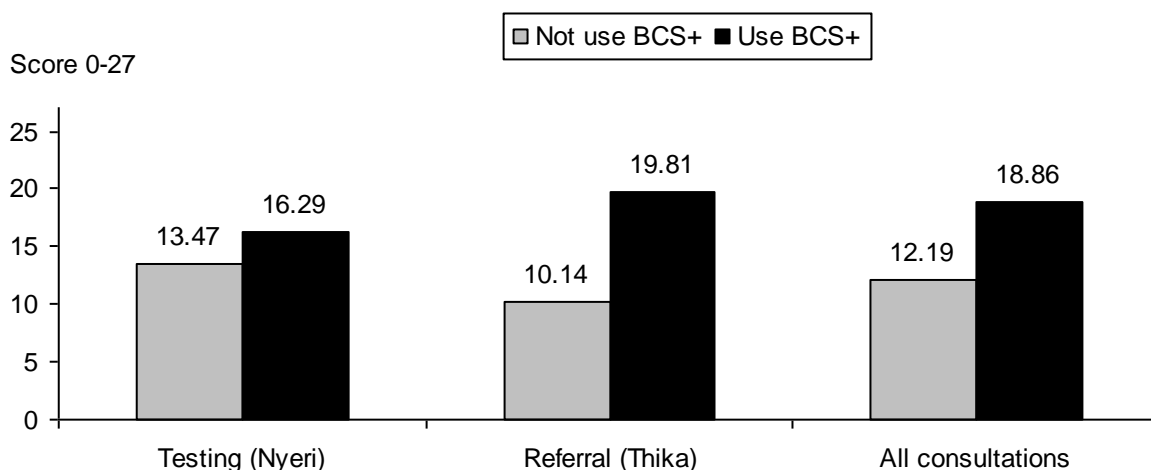
Table 10: Summary scores for quality of care components before and after intervention

Quality of care components	Testing Model (Nyeri)		Referral Model (Thika)		Pooled Sample	
	Baseline	Endline	Baseline	Endline	Baseline	Endline
	(N=214)	(N=210)	(N=324)	(N=310)	(N=538)	(N=520)
FP method counseling (0-6)	2.52	3.23**	3.16	4.41**	2.91	3.93**
Client – provider rapport (0-7)	4.05	5.24**	4.71	5.02*	4.44	5.11**
STI prevention counseling (0-5)	1.24	1.68**	0.83	2.46**	1.00	2.14**
Dual protection counseling (0-5)	0.80	1.70**	0.51	2.88**	0.63	2.40**
VCT counseling (0-4)	1.10	2.78**	0.95	2.64**	1.01	2.70**
Total score (0-27)	9.71	14.63**	10.16	17.41**	9.99	16.28**

* Significant at $p < 0.05$; ** $P < 0.01$

As noted above, this difference between the models / districts may be due to the much higher levels of use of the BCS-Plus approach in Thika district. To explore this possibility further, the scores for those consultations in which the BCS-Plus approach was used were compared with the scores for consultations in which the approach was not used. As Figure 2 shows, the summary scores for all consultations when the BCS Plus approach is used are much higher than when it is not used, clearly indicating that this approach is an effective means for improving the quality of counseling when providing integrated services. The approach was particularly effective in Thika district, causing a doubling in the quality of care scores.

Figure 2: Summary measures of quality of counseling by use or non-use of the BCS Plus



Effect on condom use

As Table 11 shows, although remaining low overall, recent and current condom use increased significantly among most clients. Of particular note are the small but significant increases in the proportions of FP clients using condoms jointly with another FP method; this is particularly marked among repeat clients, which may be attributable to messages given during use of the BCS Plus.

Table 11: Clients' use of condoms (percentages)

Proportion of FP clients who:	Testing Model (Nyeri)		Referral Model (Thika)	
	Baseline n=214	Endline n=210	Baseline n=324	Endline n=310
Ever used condom	24	20	13	12
Used condom at last sex	4 (n=181)	6 (n=173)	1 (n=246)	6** (n=227)
Used condom in last month	4	14**	5	11**
Using condom with FP method	2 (n=179)	5* (n=173)	1 (n=245)	6* (n=222)

* Significant at $p < 0.05$; ** $P < 0.01$

Effect on offering and use of HIV testing

The key outcome measures of this study were the effect of the interventions on providers offering FP clients an HIV test, and on clients' use of the HIV testing service. Table 12 shows that approximately two-thirds of new clients reported ever having an HIV test, and this did not change over time, nor was there any difference between the districts. This suggests during the duration of the study there were no external influences to increase testing among these women. For repeat clients, however, there were significant increases in the proportions reporting ever having had a test after the intervention was introduced (from 43% to 67% for the pooled sample), especially among those exposed to the testing model in Nyeri. (81%). This suggests that exposure to the intervention, as indicated by the repeat clients at endline, has increased the likelihood of ever being tested and that the testing had been done as a result of the intervention.

Table 12: Clients' experience with HIV testing

	Testing Model (Nyeri)				Referral Model (Thika)			
	Baseline		Endline		Baseline		Endline	
	%	N	%	N	%	N	%	N
Ever had HIV test - new clients	66	29	70	27	66	62	68	50
Ever had HIV test - repeat clients	46	185	81**	183	41	259	58**	259
Client offered HIV test - new clients	3	29	74**	27	0	62	34**	50
If offered, new clients accepted HIV test	100	1	50	20	0		65	17
Client offered HIV test - repeat clients	1	185	56**	183	0	259	27**	259
If offered, repeat clients accepted HIV test	50	2	61	103	0	1	72	69
Proportion of new clients being tested	3	29	37**	27	0	62	22**	50
Proportion of repeat clients being tested	1	185	34**	183	0	259	19**	259
Proportion of all clients being tested	1	214	35**	210	0	321	20**	309

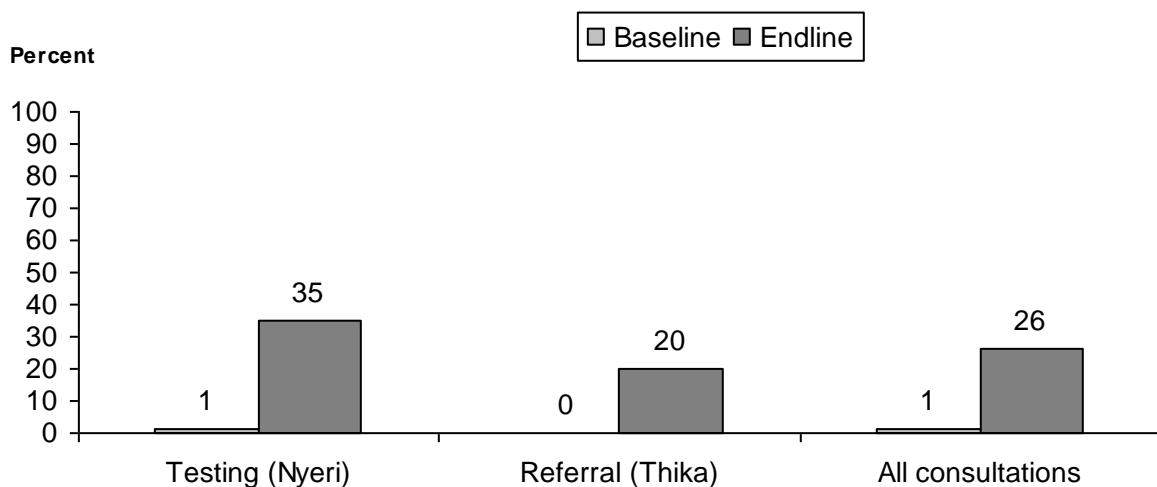
* Significant at $p < 0.05$; ** $P < 0.01$

One noticeable difference in Table 12 is that at baseline the proportions of new clients reporting ever having an HIV test were, on average, much higher (66%) than among repeat clients (43%). Anecdotal evidence from nurses at these facilities indicated that this may be because most of their new clients were women who had recently given birth (i.e. are postpartum clients) and the recent expansion of PMTCT services nationwide means that most pregnant women are now being tested. Indeed, 71 percent of new clients had a child younger than one year compared with only 45 percent of repeat clients, supporting these nurses' statements. At endline, the proportions of new clients (49%) with babies under one year old was much lower than at baseline, which may explain why there was not been an increase in the proportion of new clients reporting HIV testing over time.

There were substantial and significant increases in the proportions of clients offered HIV testing during the consultation, from one percent at baseline to 39 percent (repeat) and 48 percent (new) at endline. Providers implementing the testing model were more likely than those implementing the referral model to offer their clients HIV testing, perhaps because they were able to offer the test themselves. For both models, the proportion of new clients being offered HIV testing (48%) was higher than for repeat clients (39%). The majority of repeat clients used injectables and pills, and so make regular visits to the clinic; consequently, the provider may know (or assume) that the client had been offered testing previously and so would not have made the offer during the consultation observed. It could also be due to the fact that FP counseling for repeat clients is always less thorough than for new clients, which is no different for integrated services.

Offering a client HIV testing is clearly an important action that providers should be encouraged to take, because 50 – 72 percent of those offered testing accepted to have a test. Interestingly these proportions were higher among repeat clients, perhaps because the client had been offered the test several times before. Moreover, the proportions accepting a test were also higher in the referral model, which may substantiate the finding from client focus groups for a preference to be tested anonymously at another site.

Figure 3: Proportion of FP clients accepting to have an HIV test



As shown on Figure 3, both interventions were highly effective in increasing the proportions of all FP clients actually having an HIV test after the FP consultation³. There were no differences between the proportions of new or repeat clients having an HIV test, despite the differences in being offered or not offered a test. Overall, approximately one-third of those choosing to have an HIV test (both new and repeat clients) had never had a test before; this proportion increased to one half for those attending referral model clinics, again probably because of the anonymity involved. These data clearly indicate that both models have the potential to substantially increase the number of women accessing and using HIV counseling and testing by offering the service during FP consultations.

Cost analysis and incremental costs for scaling up

Appendix 6 describes in detail the plan and findings from cost analysis. The cost analysis calculated the planning and preparation costs, most of which were incurred by this project, and the incremental costs for providing the VCT service in addition to the FP consultation. On average, the additional time required during the consultation to provide the VCT service was reasonable – 3.03 minutes for the testing model (12.4 to 15.4 minutes) and 4.18 minutes in the referral model (13.2 to 17.4 minutes). Moreover, the additional costs per FP client were affordable, at \$0.41 for the testing model and \$0.24 for the referral model.

When deciding whether or not to scale up the intervention to other MOH facilities, the MOH will need to consider the resources required. For scaling up, we assume that much of the planning costs incurred during this OR study will not need to be repeated (development of job aids, development of training curriculum, and stakeholder meetings) and so are left out of the calculation. However, training of providers and the production of IEC materials will still be required, along with additional resources to support routine service delivery and supervision.

Table 13: Incremental cost per facility of scaling-up by model and level of care

Model	Level of facility	Financial cost ⁴ per facility (Ksh)	Opportunity cost ⁵ per facility (Ksh)	Total cost per facility (Ksh. & \$)	# of clients tested per facility	Incremental cost per client tested (Ksh & \$)
Testing	Hospital	388,834	46,430	435,264 (\$6,218)	1,110	392 (\$5.60)
	Health Center	277,133	19,212	296,345 (\$4,234)	460	645 (\$9.21)
	Dispensary	137,692	9,206	146,898 (\$2,099)	220	667 (\$9.53)
Referral	Hospital	194,695	66,012	260,707 (\$3,724)	n/a	n/a
	Health Center	130,953	20,634	151,587 (\$2,166)	n/a	n/a
	Dispensary	71,049	11,613	82,662 (\$1,181)	n/a	n/a

³ It should be noted that for the referral model, it was not possible to confirm whether or not the woman actually had the test, but the fact that she requested it and was given a voucher to take to the VCT site suggests that these figures may be indicative of actual testing.

⁴ Financial cost is comprised of the resources used for the production of IEC materials, training of providers, additional supplies for service delivery (test kits and gloves), and additional supervision visits.

⁵ Opportunity cost is comprised of the value of the additional labour time required to provide integrated services to clients. If the MOH decides to hire additional providers, these costs would then become financial costs.

For budgeting purposes, the MOH will be most interested in the cost of resources that will require additional financial expenditures as opposed to re-deployment of existing resources (e.g. staff time for service delivery). Therefore, we use the data presented in Appendix 6 to develop the following estimates of the cost of scaling-up the two models by type of facility (Table 13).

Introducing the testing model to a new facility is estimated to require resources worth \$2,099 to \$ 6,218 depending upon the level of facility. The proportions of total resources required are disaggregated as follows:

- Training providers requires between 47% (hospital) and 69% (dispensary);
- Service delivery requires between 34% (hospital) and 20% (dispensary);
- Supervision visits require between 11% (hospital) and 6% (dispensary);
- IEC materials production requires between 9% (hospital) and 4% (health centre).

Based upon the experience of this study, the estimated incremental cost per FP client also counseled and tested for HIV in the testing model ranges from \$5.60 (hospital) to \$9.53 (dispensary), which compares well with the estimated per client cost for stand-alone VCT of \$27 in Kenya (Sweat and Coates 2000).

Introducing the referral model to a new facility is estimated to require resources worth \$1,181 to \$ 3,724 depending upon the level of facility. As testing is not done within the facility, or at least within the FP clinic, there are no additional costs incurred for HIV testing. The proportions of total resources required are disaggregated as follows:

Training providers requires between 40% (hospital) and 69% (health centre);
Service delivery requires between 25% (hospital) and 14% (health centre or dispensary);
Supervision visits require between 18% (hospital) and 10% (health centre or dispensary);
IEC materials production requires between 17% (hospital) and 8% (health centre).

STUDY LIMITATIONS

The study had the following limitations. Firstly, the number and profiles of participating health facilities were different in each model. Thika had two hospitals while Nyeri had only one and Thika had eight health centers compared with four in Nyeri. Second, national HIV surveillance data shows that HIV prevalence is estimated at 10 percent in Thika compared with 2.4 percent in Nyeri, which may influence client awareness, behaviors and attitude towards HIV testing in each district. Third, Thika is primarily an urban and peri-urban district while Nyeri District is largely rural, which influences the mobility of health facility clients.

CONCLUSIONS

The study demonstrated that both models were feasible and acceptable to providers and to clients as means of integrating and linking HIV prevention counseling, condom promotion and counseling and testing with FP services, and is effective in increasing quality of care and service utilization. Specific findings showed that:

Integrating counseling and testing for HIV into FP services is feasible and acceptable: The majority of facilities had the capacity to integrate HIV prevention counseling and provision of or referral for CT services within existing FP services. Provision of both services jointly was perceived by clients to be beneficial and attractive and was welcomed by providers as an opportunity to provide a comprehensive service that better meets their clients' needs. Existing differences between clinics in each district meant that some were better prepared than others to offer integrated services.

Quality of family planning counseling improved: Significant improvements were observed in the quality of FP counseling and in the rapport established with clients in both models. Discussion of reproductive intentions remained a weakness however.

Quality of counseling on STI/HIV issues improved: As was anticipated, levels of counseling on STI/HIV issues were low at baseline. After introduction of the BCS Plus approach, there were marked increases in discussions about STIs and HIV/AIDS generally and about the risk factors, but discussions of the client's personal sexual history and behaviors remained low, and need so needs more attention.

Counseling on condoms and dual protection and their use improved: Condoms were rarely mentioned or discussed at the baseline, especially in Thika district. Training and use of the BCS Plus significantly increased discussions around condoms and their use. Reported use of condoms at last sex, in last month, and with another contraceptive method all increased significantly.

Counseling on HIV CT increased during FP consultations: One of the focus items of the intervention was to increase counseling on HIV counseling and testing during the FP consultations. At baseline, the proportion of consultations in which VCT is mentioned was quite high at 39 percent overall. Introduction of the intervention led, however, to substantial increases, with HIV counseling and testing being mentioned in 88 percent of all consultations at endline. Discussions of the client's own serostatus increased dramatically also, from an average of 24 to 81 percent of consultations.

Use of the BCS Plus approach significantly improved the quality of integrated services: Summary scores were calculated for 27 counseling items that providers were trained to cover when providing integrated services. The mean summary scores for those consultations when the BCS Plus approach was used were much higher (18.86) than for consultations when the BCS Plus was not used (12.19), clearly indicating that the BCS Plus approach is an effective means for improving the quality of counseling when providing integrated services. The approach was particularly effective in Thika district, where quality of care scores almost doubled when it was used.

Clients' offered and obtaining HIV CT increased: Approximately two-thirds of all new clients had ever had an HIV test, and this did not change over time, nor was there any difference between the districts, suggesting that there have been no external influences on testing among women not exposed to the intervention. For repeat clients, there were significant increases in the proportions ever having a test after the intervention (from 43% to 67%), and especially among those exposed to the testing model. There were substantial increases in the proportions of both new and repeat clients offered HIV testing during the consultation – from 0 – 3 percent at

baseline to 27 – 74 percent at endline. Providers implementing the testing model were much more likely than those implementing the referral model to offer HIV testing, which may be because they were able to offer the test themselves. For both models, the proportions of new clients being offered HIV testing (34% – 74%) were higher than for repeat clients (27% - 56%), which may be due to the majority of repeat clients using injectables and so the provider may have assumed that the client had been offered testing previously. Overall, 50 – 72 percent of FP clients offered testing accepted to have a test, and these proportions were higher among repeat clients and for the referral model, which may be due to a preference for anonymity at another site. The proportions of all FP clients actually having an HIV test after the FP consultation were 20 percent in the referral model and 35 percent in the testing model, with little difference between new or repeat clients. These data clearly indicate that both models are effective in substantially increasing the number of women accessing HIV counseling and testing through offering the service during FP consultations.

Incremental costs for integrating CT into FP services are affordable: On average, the additional time required during an FP consultation to provide the CT service was reasonable – 3.03 minutes for the testing model (from 12.4 to 15.4 minutes) and 4.18 minutes in the referral model (from 13.2 to 17.4 minutes), and the additional costs per FP client for this time were affordable, at \$0.41 for the testing model and \$0.24 for the referral model. For planning scaling-up of the testing model, the estimated incremental cost per FP client who is also counseled and tested for HIV ranges from \$5.60 (hospital) to \$9.53 (dispensary). This compares favorably with an estimated cost per client at stand-alone VCT sites of \$27.

Drawing from the lessons learned, the key programmatic recommendations for institutionalizing and scaling up this approach are:

- Ensuring that provincial and district level MOH managers and trainers, from both reproductive health and STI/HIV control, lead activities to build capacity and introduce the new service delivery protocols is critical.
- District and facility action plans can be used as management tools for ensuring resource mobilization and allocation and securing commitment to providing integrated services.
- The Balanced Counseling Strategy Plus approach and tools has enhanced the range of services offered to FP clients and significantly improved the quality of care.
- On-the-job updates by district level managers and trainers rapidly expanded the number of health providers able to provide HIV CT for FP clients, but for sustainability the existing FP service delivery protocols need to be reviewed and revised to mainstream this approach in high STI/HIV prevalence settings.
- Continuous availability of both FP and HIV CT commodities was a key factor in ensuring an attractive and accessible service.
- Both models are effective in increasing the number of women testing for HIV, both for the first time and for a repeat test.
- Clinics that can offer HIV testing on-site should also consider offering clients the option of being referred elsewhere for the test, given the evidence suggesting that anonymity is important for these FP clients who may meet the same provider on several occasions.

UTILIZATION OF RESEARCH FINDINGS

The preliminary findings and lessons learned were communicated to key stakeholders in August 2007. Drawing on this evidence, the DRH and NASCOP recommended that integration of HIV CT within FP services and especially using the testing model where possible, should be adopted, institutionalized and scaled up nationwide. A follow-up meeting between the MOH and FRONTIERS in September 2007 planned for national and provincial-level training of trainers (TOTs). By end of October 2007, about 40 provincial-level TOTs from the remaining seven provinces had been trained by NASCOP and DRH, in collaboration with FRONTIERS and with funding from PEPFAR through the US Centers for Disease Control (CDC), to build provincial-level capacity for training district-level staff. By mid-July 2008, the USAID-funded APHIA II partners had supported the Provincial Health Management Teams to train 93 providers in Central province and 33 providers in Nairobi province. By the end of 2008, Nairobi province plans to train a further 90 providers, Eastern Province will train a further 20 TOTs and 200 providers, and Coast Province will train 120 providers. Lessons from this study have been presented at several national and international workshops and conferences.

REFERENCES

- Boateng J., et al. 2006. Costs of Reproductive Health Services Provided by Four CHAG Hospitals, FRONTIERS Final Report: Population Council, Washington DC
- Bradley H. et al. .2007. “HIV and Family Planning Service integration and Voluntary HIV counseling and testing client composition in Ethiopia”, Presentation at the Annual Meeting of the Population Association of America: New York, USA.
- Bruce, J. 1990. "Fundamental Elements of Quality of Care: A Simple Framework," Studies in Family Planning 21, no. 2: 61-91
- Creek T., et al. 2007. “Successful Introduction of Routine Opt-Out HIV Testing in Antenatal Care in Botswana”, Acquir Immune Defic Syndr, Vol 45, No. 1.
- Central Bureau of Statistics, Ministry of Health, and ORC Macro. 2004. *Kenya Demographic and Health Survey 2003*. Calverton, Maryland: CBS, MOH, and ORC Macro.
- Leon, F. et al. 2003. Testing Balanced Counseling to Improve Provider-Client Interaction in Guatemala’s MOH Clinics, FRONTIERS Final Report: Population Council, Washington DC
- MOH. 2005. Draft Strategy for the Integration of HIV Voluntary Counseling and Testing (VCT) Services and Family Planning Services, MOH: Nairobi, Kenya.
- MOH. 2005. National PMTCT Trainers Manual NASCOP/NLTP: Nairobi, Kenya.
- MOH. 2005. Sexually Transmitted and Other Reproductive Tract Infections: A Guide to Essential Practice, Division of Reproductive Health: Nairobi, Kenya.
- MOH 2007. Costing Post Rape Care Services in the public health sector in Kenya, Division of Reproductive Health: Nairobi, Kenya.
- Homan, R. et al. 2006. “Cost of introducing two different models of integrating VCT for HIV within family planning (FP) clinics in South Africa” Paper presented at the International Meeting on Integrating HIV and RH, 9th - 10th October, Addis Ababa, Ethiopia.
- Reynolds, H. et al. 2006. Integrating Family Planning Services into Voluntary Counseling and Testing Centers in Kenya: Operations Research Results, Family Health International: Nairobi, Kenya.
- Sweat M and T. Coates. 2000. “Reducing HIV-1 in Kenya and Tanzania”, The Lancet , Vol. 356, Issue 9241: 1602-1603
- WHO (2002): The Safety and Feasibility of Female Condom Reuse. Report of a WHO Consultation 28-29 January 2002, Geneva.

Appendix 1: Algorithm for the Balanced Counseling Strategy Plus

1. Pre-Choice

Establish and maintain a warm, cordial relationship. Briefly mention the range of FP, RTI/STI/HIV services offered in the FP clinic or through referral. Assure the client that her/his FP needs will be addressed. Emphasize to the client that during the consultation, any other RH needs such as RTIs/STIs and HIV will also be addressed depending on her/his individual circumstance. Listen to the client's contraceptive needs.

Rule out pregnancy using the method card with the checklist of questions.

If client answers	Then
"Yes" to any of the questions	Continue to Step 3.
"No" to all of the questions	Send for a pregnancy test or refer to prenatal clinic. Ask client to return when she has her menstruation. Provide a back-up method, such as condoms. Discuss with client sub steps 11 to 15 below on RTI/STI/HIV prevention, risk assessment and C&T.

Display all of the method cards. If the client wants a particular method, go to Step 7.

Ask all of the following questions and set aside method cards based on the client's response:

Do you wish to have children in the future?

If "Yes", set aside vasectomy and tubal ligation cards and explain why.

If "No", keep all cards and continue.

Are you breastfeeding an infant less than 6 months old?

If "Yes", set aside the combined oral contraceptives (pills) card and explain why. Discuss the option of the mini pill.

If "No", set aside the LAM card and explain why.

Does your partner support you in family planning?

If "Yes", continue.

If "No", set aside the natural methods (Billings, Rhythm, Standard Days) and barrier methods (condoms, vaginal tablets) cards and explain why.

Are there any methods that you do not want to use or have not tolerated in the past?

If "Yes", set aside the cards the client does not want and explain why.

If "No", keep the rest of the cards.

(b) Method Choice

Give information on the methods that have not been set aside, in order of their efficacy.

Arrange the remaining cards in order of effectiveness (number on back side of each card).

In order of efficacy (lowest no. to highest), read the 4 attributes of each method not set aside.

Ask the client to choose the method that is most convenient for her/him.

Determine if there are any limitations for the method chosen, using the brochure.

Together with the client, review the brochure of the method chosen and its contraindications.

If the method is contraindicated, ask the client to select another method from the cards that remained repeating the process from Step 5.

(c) Post-Choice

Inform the client about the method, using the brochure of the method as a counseling tool (Describe action mechanism, give use instructions, side effects and alarm signs).

Determine client's comprehension and reinforce key information if needed.

Make sure the client has made a definite decision and give her/him the method chosen and/or a referral and back-up method, depending on the client's needs.

Encourage the client to involve partner(s) in contraception either through discussion or to come to the clinic

2. (d) RTI/STI/HIV Prevention, Risk Assessment and Counseling and Testing

Discuss RTI/STI/HIV transmission and prevention.

Conduct HIV/AIDS Risk assessment. If RTI/STI symptoms, treat syndromically.

Discuss dual protection. Offer condoms and instruct correct and consistent use. Ask if client knows how to use a condom. Demonstrate use if required. If client knows let her/him do a return demonstration.

Discuss and offer client opportunities for Counseling and Testing for HIV. If willing, test and counsel client for negative or positive test results as per the National Protocol.

Give follow-up instructions, condom pamphlet and pamphlet of the method chosen.

Encourage the client to involve partner(s) in HIV testing either through discussion or to come to the clinic

Complete the counseling session by giving the client a follow-up appointment; invite the client to return if s/he has problem and end the session with a warm and cordial attitude.

Appendix 2: Example of BCS-plus counseling cards

VCT Awareness (front side)



VCT Awareness (back side)

STI/HIV Prevention and VCT Awareness Counseling

- A test is available to determine whether or not a person is infected with HIV. The test involves taking a sample of blood.
- When a person is infected it can take three-six months for the body to produce levels of the antibodies that can be detected by the test
- Knowing your status can help you make decisions about protecting yourself and your sexual partners, having children, etc.
- No one can force you to have the test. Taking an HIV test is voluntary
- Results are confidential
- Positive results mean you are infected and can transmit the virus to others
- Negative results can mean you are not infected or that you are in the window period. Retest in three months. If still negative, it does not mean that you cannot get HIV at a later stage. Retest in future if you have had unprotected sex
- HIV is an STI. It is advisable to ask your sexual partners to be tested
- The test is free and available at clinics, hospitals, and other places

Dual protection (front side)

Dual protection (front side)



Dual protection (back side)

Dual Protection

- Protects against both STI and HIV and prevents unwanted pregnancies
 - Abstinence from intercourse/all types of penetrative sex
 - Using contraception correctly and consistently in a mutually faithful relationship with an uninfected partner
 - Using correctly and at each intercourse the female or male condom
 - Using your chosen method and a male or female condom at the same time
- Show how to correctly use condoms
- Give information on where to get condoms

Appendix 3: Example of BCS-plus brochure

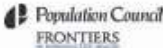


Combined oral contraception – front side

Follow these guidelines if you miss 1 or more pills:

If you:	Do this:
<ul style="list-style-type: none"> Missed 1 or 2 pills – OR – Started a new packet 1 or 2 days late 	<ul style="list-style-type: none"> Take a pill as soon as possible. Keep taking pills as usual. (You may end up taking 2 pills at the same time or on the same day.)
<ul style="list-style-type: none"> Missed 3 or more pills in the 1st or 2nd week of pill cycle – OR – Started a new packet 3 or more days late 	<ul style="list-style-type: none"> Take a pill as soon as possible. Use a backup method (condoms) or avoid sex for the next 7 days. If you had unprotected sex in the past 5 days, consider taking emergency contraceptive pills (ECPs).
Missed 3 or more pills in the 3 rd week of the pill cycle	<ul style="list-style-type: none"> Take a pill as soon as possible. Finish all hormonal pills in the packet. For a 28-pill packet, throw away the 7 non-hormonal pills. Start a new packet the next day. Use a backup method (condoms) or avoid sex for the next 7 days. If you had unprotected sex in the past 5 days, consider taking ECPs.
Missed any non-hormonal pills (last 7 pills in 28-day pill packet)	<ul style="list-style-type: none"> Discard the missed non-hormonal pill(s). Keep taking the pill, one each day. Start the new packet as usual.


Return to the health care facility anytime if:

- You have any questions or problems.
- You have missed 3 or more pills, had sex in the past 5 days, and want to avoid pregnancy. You can take ECPs.
- You develop any health problems.
- You think you may be pregnant.
- After 1 year for follow-up and to get more pills.






The Pill

(Combined Oral Contraceptives)



Combined oral contraception – inside side



The Pill

Combined Oral Contraceptives

General information:

- Requires that you take 1 pill every day.
- May cause irregular bleeding during the first few months of use.
- May also cause absence of periods or other side effects.
- Safe for women with HIV/AIDS, even if she takes antiretroviral (ARV) medicines.
- Does not protect against sexually transmitted infections (STIs), including HIV.

Effectiveness for pregnancy prevention: Pregnancy rate in first year of use is:
 – Correct use (no missed pills) — less than 1 pregnancy per 100 women (1%)
 – Typical use (some missed pills) — 8 pregnancies per 100 women (8%)

How method works:

- You take 1 pill every day. The pill is most effective when you take the pill at the same time every day.
- The pill contains small amounts of the hormones estrogen and progesterin.
- These hormones make the mucus around the cervix thick. This stops sperm from meeting an egg.
- They also prevent the release of eggs from the ovaries (ovulation).

Important facts:

- You control the method.
- Can be stopped at any time without a provider's help.
- Does not interfere with sex.
- You have to remember to take a pill once a day, every day.
- Does not protect against STIs, including HIV.
- Use condoms (male or female) if you feel at risk of STIs.

Method not advised if you:

- Are breastfeeding an infant less than 6 months old.
- Smoke cigarettes and are 35 years or older.
- Have high blood pressure.

- Have certain uncommon serious diseases of the heart, blood vessels or liver, or breast cancer. Discuss with your provider.
- Have gall bladder disease. Discuss with your provider.
- Have migraine headaches (a type of severe headache) and are 35 years or older.
- Have migraine aura (sometimes seeing a growing bright spot in one eye) at any age.
- Take medicine for seizures or take rifampicin.

Side effects:

- Lighter periods, irregular bleeding, or spotting between menstrual periods. These are common in the first 3 months of use.
- May also cause infrequent bleeding or absence of menstrual periods (amenorrhoea).
- May cause headaches, breast tenderness, or weight change. These usually lessen or stop within the first few months.
- These are normal and not signs of illness.
- Not all women have these side effects.

Health benefits:

- Helps prevent against cancer of the uterus and ovaries.
- Helps prevent pelvic inflammatory disease (PID).
- May help protect against ovarian cysts and anemia.
- Reduces menstrual cramps and menstrual bleeding problems.

How to use:

- Begin with the first pill in the packet as directed by your provider.
- TAKE 1 PILL EVERY DAY** until you finish the packet.
- Take the pill at the same time every day, for example every night before going to bed.
- If you vomit within 2 hours of taking a pill, take another pill from your packet as soon as possible. Continue taking pills as usual.
- If vomiting or diarrhea continues for more than 2 days, follow instructions for 1-2 missed pills on the next page.
- Have a new packet of pills on hand before you finish your 28-day or 21-day packet.

If using:	Do this:
A 28-day packet and you finish the packet	Begin a new packet immediately.
A 21-day packet and you finish the packet	Wait no more than 7 days before starting the new packet.

- If you get your pills from a pharmacy, use the instructions in this brochure.
- If you miss any pills, follow the instructions on the next page.

2
3

Appendix 4: Study facilities and client load

Thika District

Selected health facility	Division	2005 FP load	2005 VCT load
Hospitals			
Thika District	Municipality	9,363	2,483
Gatundu SD	Gatundu	6,791	987
Health Centers			
Ruiru	Ruiru	3,660	1,375
Igegania	Kamwangi	3,084	716
Gatura	Gatanga	2,520	189
Ngorongo	Kamwangi	2,328	322
Munyu	Thika Rural	1,716	116
Ngenda	Gatundu South	1,417	200
Kirwara	Gatanga	1,344	281
Ngoliba	Thika Rural	1,296	193
Dispensaries			
Ithanga	Kakuzi	2,712	-
Gitare	Gatundu	1,860	-
Mukurwe	Gatanga	1,656	-
Gakoe	Kamwangi	1,596	-

Nyeri District

Selected health facility	Division	2005 FP load
Hospitals		
Provincial General	Municipality	6919
Health Centers		
Gichira	Tetu	1464
Ngorano	Mathira	4238
Warazo	Kieni West	1624
Belle View	Kieni West	1977
Dispensaries		
Kiaguthu	Othaya	1211
Mweru	Mukurweini	1104
Kiganjo	Municipality Division	1600
Island	Kieni East	1376

Appendix 5: Availability of equipment, supplies and FP and STI/HIV services

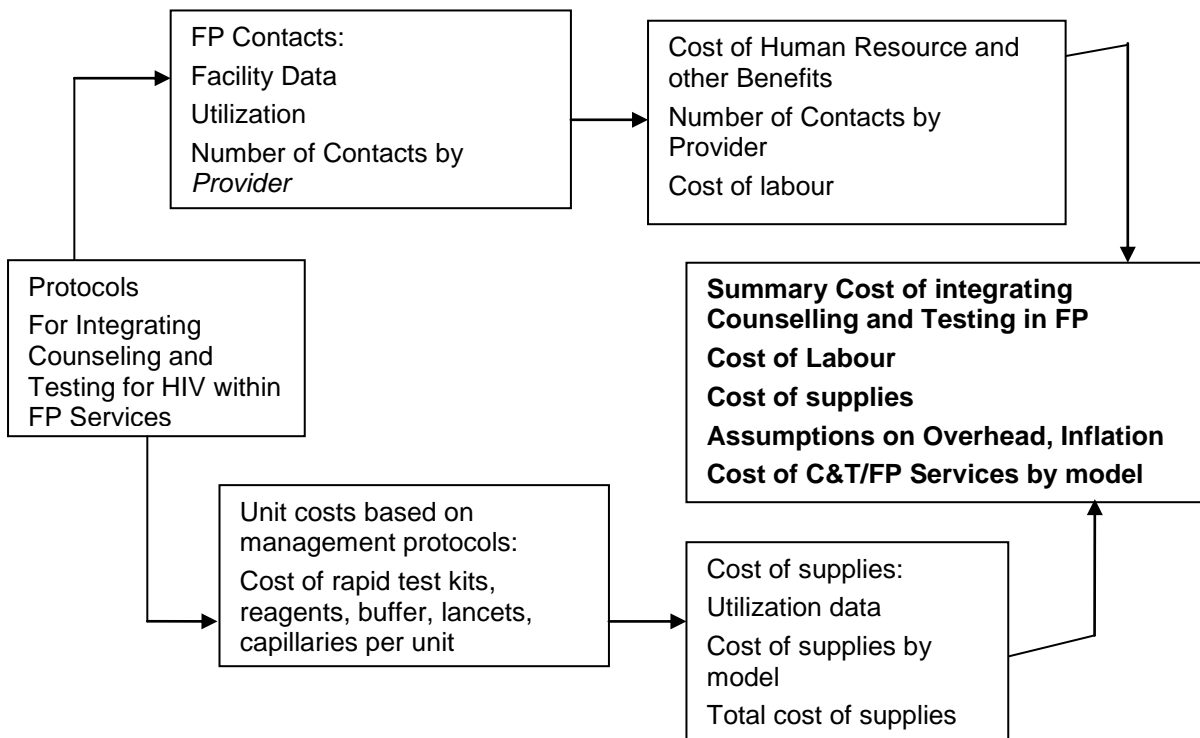
Percentage of facilities with:	Pooled Sample	Testing Model	Referral Model
	(N=23) %	(N=9) %	(N=14) %
BP Machine	100	100	100
Stethoscope	96	100	93
Weighing machine	96	89	100
Examination light	38	25	46
Forceps	100	100	100
Scissors	100	100	100
Suction machine	52	63	46
Large tray or kidney dish	100	100	100
Green towels	68	88	57
Examination couch	100	100	100
Screen for privacy	83	78	86
Display board for FP methods	43	75	23
Penile model	74	56	86
Portable light	43	44	43
Sterilization set/autoclave	59	63	57
Autoclaving tape	55	50	57
Sterilizing drums	57	56	57
Total	74	76	74
Availability of FP Supplies			
IUCD kit	74	83	69
Disposable towels	14	25	7
Green towels	65	78	57
Total	46	52	43
Availability of HIV/STI Supplies			
Syringes and needles	90	100	85
Laboratory reagents for urine	100	100	100
Laboratory reagents for HIV	44	63	30
Laboratory reagents for HB	74	75	73
Laboratory reagents for VDRL	95	88	100
Clean gloves	100	100	100
Sterile gloves	68	88	57
Gauze	100	100	100
Cotton wool	100	100	100
Hand washing soap	91	100	86
Rapid test kits	65	56	71
IEC materials for VCT	45	22	62

Percentage of facilities with:	Pooled Sample	Testing Model	Referral Model
Total	81	83	80
Availability of Basic Infrastructure			
Room for privacy	95	100	92
Clean water	96	100	93
Power to ensure fridge remains functional 24hrs/day	95	88	100
Functional fridge	100	100	100
MCH/FP waiting area is shaded and with seats	95	100	93
Furniture	91	100	85
Clients have access to toilets	95	100	92
Incinerator	44	33	50
Placenta pit	86	88	85
Total	84	83	84
Provision of FP Services			
Combined oral contraceptives pills (COC)	95	89	100
Progestin-only contraceptive pills (POP)	76	89	67
Emergency contraceptive pill (ECP)	61	86	45
Progestin only injectable contraceptive - DMPA	100	100	100
Progestin only contraceptive implants - Norplant	21	13	27
Progestin only contraceptive implants - Jadelle	30	25	33
Intrauterine Contraceptive Device (IUCD)	85	100	73
Voluntary surgical contraception	21	33	13
Male condom	96	100	93
Female condom	86	100	75
Lactational amenorrhea method (LAM)	67	63	70
Natural family planning	58	67	50
Counseling for FP	100	100	100
IEC materials for FP	84	100	73
Referral	89	100	82
Total	63	73	56
Provision of HIV/STI Services			
HIV General counseling	95	100	91
Counseling for HIV/AIDS within FP services	61	75	50
HIV IEC	80	89	73
HIV Behavior change communication	95	100	92
Routine testing for HIV in STI & TB clinics	32	38	27
Routine testing for HIV in ANC PPC clinics	65	75	58
HIV Pre-test counseling	80	88	75
HIV Post-test counseling	70	63	75
Provision of ARVs in PMTCT/CCC	60	63	58

Percentage of facilities with:	Pooled Sample	Testing Model	Referral Model
Provision of PMTCT services	76	75	77
Counseling for dual protection from HIV	68	75	64
Gender-based violence recovery services, PEP	26	14	33
STI Treatment	100	100	100
STI Counseling	100	100	100
Partner follow-ups for STIs	100	100	100
STI Information, education and communication (IEC)	91	89	93
Laboratory diagnosis of STI	86	86	86
Provision of antibiotics/appropriate drugs for STIs	100	100	100
Syndromic management of STIs	100	100	100
Dual protection from STIs	100	100	100
Total	73	77	71
Staffing			
Average number of enrolled nurses/midwives in MCH/FP health facilities	6	4	7
Average number of registered nurses/midwives in MCH/FP units in health facilities	1	1	1

Appendix 6: Measuring and analyzing incremental costs

In the interventions tested, clients seeking PF information and services also receive information and services on HIV, including counseling and testing. In addition, some of the clients receive services pertaining to RTIs/STIs and referral to other facilities in situations where a particular service may not be available. The costing framework for integrating counseling and testing for HIV into FP services takes into account only the additional costs incurred for integrating these services. From the figure below, these costs are represented by the interface between FP and HIV/AIDS services, as well as other costs shown in the intervention arm.



Cost Estimation

The purpose of this cost estimate is to provide guidance to the MOH as to the additional resources required to introduce C&T for HIV into facility-based FP services. The estimation of incremental costs used a four-step process:

1. Identification of all resources used to introduce VCT services.
2. Measuring resources in their natural units (quantification) e.g. number of HIV test kits supplied.
3. Converting natural units into cost estimates (i.e. quantity x unit price).
4. Estimating incremental costs associated with introducing each of the models.

Data were collected retrospectively (before introduction of the interventions) and prospectively (during implementation of the interventions) from the 23 facilities based on the steps shown above. Data were obtained from: key informant interviews, review of administrative data, FP utilization registers and observation of the time each provider spent with clients. The

introduction of integrated services can be thought of as taking place in two phases: planning/preparation and service delivery.

The planning phase is used to prepare for the actual provision of services. Activities in this phase include: stakeholder meetings, site assessments, modifications to service delivery points, the production of IEC materials, and the training of service providers. The resources used to support these activities represent a one-time up-front investment and will depend upon the context in which the intervention takes place. As a result, one needs to be careful when generalizing these resource requirements to other settings.

The service delivery phase corresponds to the time when clients are receiving the integrated services. The additional resources required to provide integrated C&T services were classified into three broad categories: labor, test kits, and other medical supplies. These resources are required on an on-going basis and therefore represent recurring costs to the program. The magnitude of these costs is sensitive to the volume of clients served but on a per client basis these costs can be inflated to estimate costs for different size programs. Assumptions made for service delivery cost estimation are outlined in the box below.

Box 1: Estimation of Incremental Service Delivery Costs	
Cost Category	Measurement and valuation of Cost Components
Labor	<p>Measurement: Additional time spent serving clients with integrated services</p> <p>Valuation: Government gross salary for 2006/2007, based on mean grade J; working 22 days a month and 8 hours a day</p>
Quantities and combination of rapid tests	<p>Measurement: Use of standard counseling and testing protocol. Consumption of the Bioline Rapid HIV kits was estimated at 20% of the quantities of Determine Rapid HIV Kit used. Consumption of Unigold (one of the rapid HIV test Kits) was estimated at four percent of the Determine consumption (since consumption data on Unigold was often incomplete or missing)</p>
Medical supplies	<p>Valuation: Unit costs of rapid test kits and reagents from KEMSA</p> <p>Measurement: Per protocol</p> <p>Valuation: Unit costs of gloves obtained from KEMSA</p>

When reporting on incremental costs, a distinction is made between financial and non-financial (opportunity) costs. While additional staff time is required to provide the integrated services, there are no additional labor expenditures required so this resource requires a re-allocation of existing resources. For the test kits and other medical supplies, there will need to be additional financial expenditures to source these supplies. The incremental financial and non-financial resources required are documented below.

Planning / Preparation Costs: Prior to the intervention, FRONTIERS facilitated meetings with the MOH to reach consensus on the approaches to be used and the goals of integrating VCT and FP services. Job aids and client brochures were developed and produced and a total of 75 providers (47 in Thika district and 28 in Nyeri district) were trained. Each district held two training sessions so as not to disrupt service delivery in the pilot facilities. The cost per trainee per day was approximately \$80 for the testing model and \$75 for the referral model. Table A presents the estimated costs of planning and preparation activities which indicate the magnitude of up-front investments that may be required to replicate this process in other settings. Most of these costs were from the project and therefore outside of the MOH.

Table A: Planning and preparation costs by type of activity for both districts

Stakeholder Meetings		357,000 (\$5,100)
Development & Production of Job Aids		469,560 (\$6,708)
Production of IEC Materials		336,000 (\$4,800)
Curriculum Development		1,447,600 (20,6800)
Training of Providers ⁶	<i>Testing Model</i> : 28 providers, each trained for 9 days	1,407,200 (\$20,103)
	<i>Referral Model</i> : 47 providers, each trained for 5 days	1,228,444 (\$17,549)
	Sub-total	2,635,644(\$37,652)
TOTAL		4,888,804 (\$69,840)

Incremental Costs of Service Delivery: The additional resources for provision of VCT within FP clinics for the testing model in Nyeri district are: labor, rapid HIV test kits and other medical supplies. Additional resources for the referral model in Thika district were labor, overhead and cost of buildings and equipment. The incremental cost per client served was computed for FP clients receiving the following services in each model: FP clients counseled and tested; FP clients who discussed the risk for HIV/STIs with provider; FP clients who were referred for testing and post-test counseling. The cost of labor was based on the time the health provider was observed spending in direct contact with the client. Using information obtained from the providers themselves and verified by the MOH, the cost of labor per minute was derived as follows:

$$\text{Cost/minute} = \text{Annual Salary} / (\text{Normal Work Days in a year, } 22 \times 12 \text{ months}) * \text{Minutes per day}$$

Table B shows the unit price of labor (per minute) and the difference in consultation time between baseline and end-line, to derive incremental labor cost per person⁷.

⁶ The total cost shown includes various costs such as transport refund to participants, full board costs for participants including trainers, incidental costs e.g. photocopying, out of pocket allowance, fuel refund, accommodation for drivers, purchase of training material e.g. stationery among others.

⁷ Similar calculations were applied in computing costs of reproductive health services in four CHAG hospitals (Boateng, *et al*, 2006).

Table B: Unit price of labor and incremental labor time by district

Labor	Unit price (Kshs.)	Baseline survey	End line survey	Difference	
		Average duration of consultation time	Average duration of consultation time	Qty used	Incremental cost per person (Kshs)
Testing: Nyeri	2.27 per minute	12.40	15.43	3.03 minutes	$2.27 \times 3.03 = 7$
Referral: Thika	2.27 per minute	13.21	17.39	4.18 minutes	$2.27 \times 4.18 = 9$

The incremental time for Thika District was higher (4.18 minutes) than that of Nyeri District (3.03 minutes), although the reasons for the differences were not investigated. However, background data shows that facilities in Thika are better staffed than those in Nyeri. For instance, facilities in Thika have an average of 7 enrolled nurses while those in Nyeri have 4 enrolled nurses. Findings from the focus group discussions seemed to confirm that providers especially in Thika had devised coping mechanisms for dealing with workload despite the staff shortage such as reporting to work early, using lunchtime break and any other free time to attend to the clients, and using other staff members such as Public Health Technicians to educate clients on FP and VCT. These actions seemed to increase the time available for provider-client consultations. On the other hand, given that Nyeri was worse off with regard to staff shortage when compared to Thika, it is probable that consultations took a shorter time in order to serve all the clients in the testing model without turning any of them away. The fact that providers in Nyeri did not mention employing any coping mechanisms seemed to suggest that they did not gain additional contact time with their clients.

Cost of rapid test kits and supplies: The cost of rapid HIV test kits and gloves used in performing an HIV test are presented in the Table C. In Nyeri a total of 4,748 HIV test kits were used and 4000 pairs of gloves during the intervention. The total cost was Kenya Shillings 355,676 (approximately \$5,472)

Table C: Cost of HIV rapid test kits and disposal gloves (Nyeri district)

Item	Qty of items per pack	Price per pack	Unit price (Kshs.)	No. of tests/items used	Total cost
Determine	100	6,925.10	69.25	3829	265,172
Bioline	20	1,358.00	67.90	766	52,001
Unigold	20	2,520.00	126.00	153	19,303
Disposable gloves	50	240.00	4.80	4000	19,200
Total Cost					355,676

Source of the price for supplies: Kenya Medical Supplies Agency Procurement Department

Cost of additional supervisory visits: In order to reinforce the new methods of counseling clients, the Population Council provided additional supervisory visits to complement the on-going supervision visits provided by the MOH. The resources used for these activities totaled 400,050 Kshs or \$5,715 (Table D). The table below indicates how these costs varied by model and type of facility. The variation is due to differences in travel distances, number of facilities, and number of visits per facility.

Table D: Cost of additional supervision during intervention by model and level of care

Model	Level of Care	Supervision Costs (Kshs)
Testing	Hospital (n=1)	45,929
	Health Centre (n=4)	74,834
	Dispensary (n=4)	35,687
	Sub-Total (n=9)	156,450
Referral	Hospital (n=2)	93,610
	Health Centre(n=8)	117,048
	Dispensary (n=4)	32,942
	Sub-Total (n=14)	243,600

Total Incremental Cost for Service Delivery: The annual labor costs were higher in Thika compared to Nyeri District, which can be explained by the fact that more clients (36,206) were seen in Thika’s 14 health facilities when compared to those who were seen in 9 health facilities in Nyeri (23,277). A summary of total costs by resource categories and average cost by model are shown in Table E.

Table E: Incremental costs by resource categories and average incremental cost by model (Kshs)

Resource category	Incremental cost by resource category		Average incremental cost for each FP client per resource area based on FP workload	
	Nyeri	Thika	Testing (Nyeri)	Referral (Thika)
Labor	160,102	343,544	6.90	9.50
Test Kits	336,476		14.50	-
Gloves	19,200		0.80	-
Additional Supervision	156,450	243,600	6.7	7
Total	672,228 (\$9,603)	587,144 (\$8,388)	28.90 (\$0.41)	16.50 (\$0.24)

The average additional contact time was 3.03 minutes in Nyeri health facilities compared to 4.18 minutes in the Thika health facilities. The additional annual labor cost (total contact time x cost per minute) amounted to Kshs 70,529 (\$ 1,085) and Kshs 151341 (\$ 2,328) in Nyeri and Thika respectively. For both models, the average cost by level of care was low for dispensaries when compared to hospitals (Table F). The differences in hospital and dispensary costs were more prominent in the Thika model where hospital costs were almost three times more. However this is related to client load and number of staff available.

Out of the 23,277 clients who attended for FP services in the pilot facilities in Nyeri District, 3,829 were tested for HIV. The total amount of service delivery costs (financial resources) spent in the testing model was Kshs. 672,228 including the opportunity cost for labor. Incremental average cost per FP client tested for HIV was Kshs.176 (\$2.5).

Table F: Average incremental service delivery costs by type of resource and level of care in the two models

Level of Care	Labor (Kshs)	Test Kits (Kshs)	Gloves (Kshs)	Additional Supervision (Kshs)	Total (Kshs)	Average cost/per facility type (Kshs)
Nyeri District (Testing model)						
Hospital-Nyeri PGH	46,430	97,578	5,339	45,929	195,276	195,276 (\$2,790)
Health centers	76,849	161,509	10,45	74,834	323,648	80,912 (\$1,156)
Dispensaries (n=4)	36,823	77,389	3,405	35,687	153,304	38,326 (\$548)
Sub Total (n=9)	160,10	336,476	19,20	156,450	672,228	74,692 (\$1,067)
Thika District (Referral model)						
	Labor	Test Kits	Gloves	Additional Supervision	Total	Average cost/per facility type
Hospital (n=2)	132,02	0	0	93,610	225,633	112,816 (\$1,612)
Health centers	165,07	0	0	117,048	282,119	35,265 (\$504)
Dispensaries (n=4)	46,450	0	0	32,942	79,392	19,848 (\$284)
Sub Total (n=14)	343,54	0	0	243,600	587,144	41,939 (\$599)

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