Feasibility, Acceptability, Effectiveness and Cost of Models of Integrating HIV Prevention and Counseling and Testing for HIV within Family Planning Services in North West Province, South Africa

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EXECUTIVE SUMMARY

In South Africa, care and support and antiretroviral (ARV) treatment for individuals infected with HIV is available at a few selected hospitals as a first step in the national treatment roll out. However, counseling and testing for HIV (C&T) is currently limited to antenatal care (ANC) settings and a few stand-alone centers. Uptake is limited, even within the ANC setting where C&T is systematically offered to clients for the prevention of mother to child transmission of HIV (PMTCT). C&T services have yet to be integrated into other reproductive health services. While providing C&T services within family planning (FP) services may not be effective in every context, in South Africa FP services are well utilized and so the Government is seeking opportunities to expand access to and use of C&T services through other well-utilized services. This integration strategy requires the reorientation of FP services to not only integrate C&T but also to strengthen education and screening on STI risks and information on dual protection. The degree of linkage or integration may affect the quality of existing services and information is also needed to determine whether integrating services leads to increased uptake of FP or C&T.

The Population Council's USAID-funded Frontiers in Reproductive Health (FRONTIERS) Program, in collaboration with the National Department of Health and the North West Provincial Department of Health and with support from PEPFAR, initiated a two phased operations research study. Phase I of the study, reported here, assessed the feasibility, effectiveness and cost of two models of integrating C&T within FP services, while Phase II will focus on the development and evaluation of a single model that merges aspects of these two models. The overall objectives of the study was to test the acceptability, feasibility, and cost of two different models of integration of counseling and testing for HIV into family planning services in South Africa and to evaluate their effectiveness against standard practice.

Both models integrated routine discussion of HIV/STI risk and prevention, strengthened focus on dual protection, and increased C&T awareness-raising into all FP consultations. The Testing Model educated FP clients about C&T and offered C&T within the FP consultation by an FP provider, while the Referral Model educated FP clients about C&T and then referred interested clients for testing and post test counseling to a specialized C&T service. Key interventions included: (a) holding sensitization meetings at the national, provincial and district levels; (b) reviewing and developing training materials; (c) application of the Balanced Counseling Strategy Plus (BCS+) approach; (d) modification of registers for collection of FP and C&T statistics; and (e) training of health providers. The Department of Health (DOH) provided the required basic supplies such as HIV rapid test kits and the FP commodities.

A total of 129 service providers, including local area service managers, were trained on how to integrate C&T into FP using the *BCS-Plus* tool. The duration of training varied by model**:** three days training was conducted with 56 providers who implemented the Referral Model and four days training, including HIV C&T, was conducted with 73 providers who implemented the Testing Model. Training focused on service integration but also included updates in FP method effectiveness, WHO medical eligibility criteria, Reproductive Tract Infections (RTIs) and HIV, reproductive rights, informed choice and consent, safe sex and dual protection, values clarification, risk assessment and reduction of risk, record keeping, logistics management, and referral. These training workshops were held between April and June 2005.

A three-arm cluster randomized control trial with two intervention groups and one comparison group was used. Eighteen individual clinics were randomized to implement one of the models or to continue with the current standard of care (i.e. six clinics per group). Pre-intervention data were collected through client exit interviews (N=369) and client provider observations (N= 374) in December 2004 and the same data collection methods were repeated post-intervention in December 2005 (N=366 for both methods). Twelve Focus Group Discussions (FGDs) with providers and clients (six with clients and six with providers) were also conducted. Data were analyzed using STATA 8 and thematic analysis for qualitative data. Cost was measured in terms of development of resources and the provision of intervention materials.

At baseline, STI/HIV/AIDS were already being discussed in over half of all consultations and there was little improvement after the intervention. Providers implementing the referral model were significantly more likely to discuss STI/HIV risk factors with clients after the intervention, whereas those implementing the testing model on improved on discussion of the increased risk of HIV with an STI. There were improvements in virtually all items concerning dual protection and condom use for all groups of observations. Significant improvements in the control group probably reflect the national campaigns to promote condom use, and there appears to be little additional value gained from exposure to the intervention in the two experimental groups.

The strong emphasis on HIV C&T did lead to significant improvements during counseling the FP clients, for both models. Most impressive were the large increases in discussing the client's HIV serostatus (from 5 – 6% at baseline to 62 – 81% at endline), although there was also a substantial increase in the control group (16% to 25%).

There were no significant differences in the quality of FP counseling scores for either intervention group or in the quality of client-provider rapport, which suggests that adding the HIV services have not adversely affected the FP service. Discussion of reproductive intentions increased significantly in both experimental groups but declined significantly in the control group. The mean consultation time in the control groups remained constant at 22 minutes for both baseline and endline surveys, whereas for the testing group it increased from 16 to 18 minutes and for the referral group from 21 to 25 minutes.

The baseline scores highlight that the testing facilities started with lower quality of care scores overall than the referral and control facilities. Although the control facilities had no training or support from the study team during the intervention implementation period, the endline survey shows a notable although non-significant improvement in the quality of counseling. There was a statistically significant improvement in dual protection counseling across all three groups. The referral model showed significant improvements in four of the five indicators and the testing model showed improvements in two indicators. Overall, both groups demonstrated significant improvements, which is probably attributable to use of the BCS+ tool.

Reported behaviors for condom use by clients changed significantly in both intervention groups, while not changing at all in the control group. The only behavior that changed in all groups was the proportion of clients who reported currently using a condom with another contraceptive method, which increased dramatically from 5-10% at baseline to 35-50% at endline.

Although the proportion of consultations in which providers mentioned C&T significantly increased in the control group (possibly due to some contamination between facilities), it increased much more in the two intervention groups. This also translated into an increase in the proportion of clients being offered and HIV test, especially by the providers in the referral facilities. The proportion of clients offered C&T who then decided to have a test also increased over time, so that by the endline survey 19-25% of clients in the intervention facilities had decided to have an HIV test, compared with 7-9 percent at baseline. There was also a significant increase in control facilities, albeit from one to five percent. Both the testing and referral models seem to have proved effective, therefore, in increasing the proportion of FP clients who have and HIV test. One important limitation of this study, however, is that it was not possible to confirm whether or not the clients deciding to be tested actually had the test.

In conclusion, the integration of HIV prevention activities, including education about prevention, dual protection and counseling and testing within FP services in public facilities in South Africa is feasible and acceptable to both FP providers and clients. Use of the BCS+ tool is effective in improving the overall quality of care. Both the Testing and Referral Models were acceptable and effective and so can be used interchangeably depending on client needs and preferences and the skills of the providers.

Considering the policy context and the evidence from this study, the following recommendations are proposed:

- Counseling of all FP clients about STI/HIV/AIDS risk behaviors and prevention can address common misconceptions, and provides the opportunity to engage with clients about their sexual behavior and interest in HIV testing.
- Client preference for location of HIV testing should be respected and clients should be able to access services in the facility where they receive FP services or through referral.
- To assure the quality and effect of integrating services at the district level, it is important that records are kept and reported that describe the HIV services provided during FP consultations.

ACRONYMS

AIDS	Acquired Immune Deficiency Syndrome
BCS-Plus	Balanced Counseling Strategy-Plus
DP	Dual protection
FGDs	Focus group discussions
HIV	Human Immune Deficiency
MCWH	Maternal, Child, and Women's Health
NDOH	National Department of Health
PMTCT	Prevention of mother to child transmission of HIV
RHRU	Reproductive Health & HIV Research Unit
RTI	Reproductive tract infection
STI	Sexually transmitted infection
C&T	Counseling and testing for HIV

BACKGROUND

South Africa has one of the highest HIV prevalence rates (29.1% nationally) in the world. Contraceptive use among women in the reproductive age (15-49) is also high, reported to be 65.3% (SADHS 2003). The most commonly used methods of contraception are injectables (33%), pills (13%) and male condoms (8%) (SADHS 2003). The National Department of Health (NDOH) has rolled out a number of vertical HIV prevention programs, but uptake of services has been mixed. New policies such as the HIV & AIDS & STI National Strategic Plan (2007-2011) and the Policy and Guidelines for PMTCT support integration of HIV and Reproductive Health (RH) services as a key component of the NDOH strategy (NDOH 2007). Nevertheless, despite supportive policies and guidelines, program implementation remains a challenge. There are missed opportunities for offering HIV prevention counseling as well as counseling and testing (C&T) within the context of FP services, which could potentially increase the opportunity for this sexually active population to better understand how to protect themselves from possible infection and to know their status.

Two models were developed and tested in response to the expressed interest of the NDOH to offer two levels of integration of C&T into family planning. Both models included common components of a strengthened FP consultation plus routine STI/HIV education and risk assessment. The Testing Model educated FP clients about HIV C&T and offered C&T during the FP consultation by the FP provider, while the Referral Model educated FP clients about C&T and referred interested clients for testing and post-test counseling to a specialized C&T service. Both models were compared with facilities offering the existing standard of care for FP.

OBJECTIVES

The overall objective of the project was to assess the feasibility, acceptability, effectiveness and cost of integrating HIV prevention information and C&T services into FP services. The specific objectives were:

1) To develop and implement a model of integration that educates FP clients about C&T 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 C&T and refers interested clients for testing and post-test counseling to a specialized C&T service.
3) To describe the feasibility of implementing both models as well as provider perspectives on their implementation.
4) To assess implementation of the two models in a number of health care delivery settings in terms of their acceptability to clients, effectiveness in increasing C&T uptake, and incremental costs.
5) To assess the effect of integrating C&T on the quality of FP services received; and
6) To disseminate and utilize results to create the conditions for scale-up.

SITE DESCRIPTION

The study was undertaken in South Africa's North West Province (NWP). The province is primarily a mining area, has a population of approximately 3.4 million people, and is the sixth most populated province in South Africa. Ninety-one percent of the population is of African descent, mainly Tswana, with a strong cultural belief that men determine the family's reproductive practices, including the use of condoms. Women are not expected to ask their male sexual partners to use condoms despite the fact that men are often away from home and may have other sexual partners known to their spouses. Whites make up seven percent of the population, coloreds one percent, and Asians 0.3 percent. The province has the lowest proportion of people aged 20 years and older (6%) who have received a higher education. The literacy rate in the region is 57 percent, which is well below the national rate of 85 percent. The 2006 national HIV survey among antenatal attendees indicated that 29 percent of pregnant women in the North West Province were HIV-positive.

A baseline health facility assessment was conducted in March 2004 in all 21 health facilities in the three districts selected for the study that were found to be eligible according to the following criteria: availability of HIV C&T; more than 100 FP clients per month; able to provide STI treatment; presence of more than one professional nurse. Three clinics were dropped from the study, one due to low client load, one due to structural issues that would not allow implementation, and one due to high turnover of staff because being a training centre. The remaining 18 clinics (6 urban, 5 peri-urban and 7 rural) fulfilled the criteria. Facilities were randomly assigned to each of the three study groups, although because each district has clinics from all three study groups there is the possibility of 'contamination' between the groups.

Table 1: List of districts and clinics by model

Facility Name		Model of integration
A. Moretele District Health Facilities		
1	Kutlwanong	Referral
2	Kekanastad	Control
3	Mathibestad	Referral
4	Makapanstad	Control
5	Temba	Testing
6	Refentse	Referral
7	Moretele	Testing
B. Odi District Health Facilities		
1	Kgabo	Control
2	Sedilega	Referral
3	Phedisong1	Control
4	Winterveldt	Testing
5	Tlamelong	Referral
6	Boekenhout	Testing
C. Rustenburg District Health Facilities		
1	Luka	Referral
2	Boitekong	Testing
3	Mfidikwe	Control
4	Wonderkop	Testing
5	Hartebeesfontein	Control

FEASIBILITY

A trained field supervisor visited all 18 clinics and collected data on supplies and equipment, client load, and current procedures for provision of care using an inventory tool. A follow-up supervisory visit was conducted three months after the implementation of the intervention. During these visits a supervisory tool was used to monitor intervention materials, equipment and supplies. As can be seen in Table 2, most facilities were ready for to provide integrated HIV/FP services, although staff shortages remained a challenge.

Table 2: Availability of supplies and equipment to provide FP and HIV services

Proportion of facilities with Commodities and Equipment available:	Testing Model (N=6)	Referral Model (N=6)	Control (N=6)
(1) Penis model (dildo)	1.00	0.66	0.83
(2) Gynecological exam table	0.83	0.66	0.83
(3) Speculum	1.00	1.00	1.00
(4) Thermometer	1.00	0.83	1.00
(5) Stethoscope	1.00	1.00	1.00
(6) Blood Pressure gauge	1.00	1.00	1.00
(7) Combined Pills	1.00	1.00	1.00
(8) Progestin only Pills	1.00	1.00	1.00
(9) Emergency Contraception	0.83	0.50	0.83
(10) 2 Month Injectable	1.00	1.00	1.00
(11) 3 Month Injectable	1.00	1.00	1.00
(12) Female Condoms	0.50	0.16	0.50
(13) Male Condoms	1.00	1.00	1.00
(14) HIV rapid test kits	1.00	1.00	1.00
(15) Disposable syringes	0.83	1.00	0.66
(16) Re-usable syringes	0.33	0.00	0.00
(17) Disposable gloves	0.66	1.00	0.83
Total score (0-17)	15.00	13.83	14.50

There were no significant differences between the three groups of clinics in terms of supplies and equipment, although the clinics in the Referral model were less well supplied in terms of emergency contraception, female condoms, and re-usable syringes, where less than half of the facilities had these supplies.

As illustrated in Table 3, family planning services are delivered largely by professional nurses (from 5 to 8 in each site) with enrolled nurses (about 1 per site) and nursing assistants (about 2 to 3 per site) only helping out with the intake and vital data. However, in some clinics, enrolled nurses or enrolled nursing assistants provide FP services under the supervision of the professional nurse. C&T is a vertical program within the facilities that is mainly provided by lay counselors; for any client that wants to be tested, the testing is done either on site or at a specific site outside the clinic. In the Referral Model clinics there were, on average, one fewer lay counselor than in the testing sites.

Table 3: Staff availability and client load

Number of Staff	(A) Pooled Sample N=18	(B) Testing Model (N=6)	(C) Referral Model (N=6)	(D) Control (N=6)
Registered Nurses (RNs)	7.11	7.33	5.50	8.50
RNs providing FP	4.72	4.83	5.50	3.80
Enrolled Nurses (ENs)	1.05	1.16	0.83	1.16
ENs providing FP	0.72	1.00	0.75	0.33
Enrolled Nurse Assistants (ENAs)	2.55	2.50	3.00	2.16
ENAs providing FP	0.26	0.00	0.50	0.20
Number of Lay Counselors	1.88	2.33	1.00	2.33
Average Client load				
FP Clients	448	410	706	324
C&T	43	52	36	41

Note: F-probability based on Wald test, mean values adjusted for survey design; all indicators are from the observation module.

* denotes significance at the 10 % level, ** at the 5% level and *** at the 1% level

The client load of the clinics varied considerably, with an average of about 448 FP clients per month (range 151 – 1245), and an average of 43 C&T clients per clinic (range 8 – 120 clients per month). This figure includes all referrals, not only those clients referred from FP services. The Referral Model clinics had more FP clients but fewer C&T clients at the outset of the intervention. Despite using randomization to try to create equivalent groups, the differential staff numbers and client load certainly had the potential to affect the implementation and eventual effectiveness of the model interventions.

IMPLEMENTATION OF THE INTERVENTION

The Population Council team had several meetings with the National Department of Health, Maternal and Child Women's Health (MCWH) directorate. North West province was identified by the NDOH as a potential site for the study and buy-in meetings were held with the provincial MCWH, as well as the regional and district directorates. During these meetings, members of the provincial and district teams discussed the current number of C&T sites, strengths and opportunities for the proposed project, challenges, potential solutions and their expected roles and responsibilities.

Several working groups were tasked to develop an information, education and communication (IEC) training curriculum, the training strategy, adaptation of the BCS plus tools, and the translation of pamphlets into the local language. The intervention consisted of four components: 1) strengthening FP services across all public primary health care settings; 2) introducing STI and HIV risk assessment; 3) promotion of dual protection; and 4) increased access to C&T.

Tools for providers

In the late 1990s, the Population Council's FRONTIERS Program worked in collaboration with Ministries of Health in several Latin American countries to develop and test a practical,

interactive, and client-friendly strategy for improving counseling within family planning consultations called the *Balanced Counseling Strategy* (León 1999; León et al. 2003). The process, tested and refined in several countries, involves a series of steps to determine the client's needs and then identify a limited range of methods that best suit the client's preferences and needs. This algorithm has been demonstrated to significantly improve the quality of provider counseling and allows the client to take ownership of the decision. The approach is practical, low cost, and easy to adapt to local contexts.

After discussion with stakeholders it was decided that a version of the *BCS* would be adapted for the high STI and HIV prevalence setting of NWP. This modified tool was renamed the *Balanced Counseling Strategy Plus (BCS-Plus)*, and the adaptations were undertaken jointly by DOH and Population Council staff. The *BCS-Plus* was designed to increase the overall quality of FP services through increased choice and discussion of methods, and at the same time strengthen the integration of issues surrounding HIV and STIs into the FP counseling.

The *BCS-Plus* Toolkit consists of a set of counseling job aids: (a) an algorithm, (b) a set of method cards, and (c) corresponding brochures for clients on each FP method. The algorithm summarizes the 19 steps a service provider should take to implement the *BCS-Plus* during a counseling session. There are 19 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 family planning method cards then are used to help narrow down the appropriate method for the client. Each method card has an illustration of the method on the front side of the card. The back side of the card contains a description of four basic attributes or characteristics of the method. This allows the client to receive the key information about the method. Lastly four cards on STI/HIV were included: (1) STI/HIV transmission and prevention information, (2) HIV C&T, (3) STI/HIV risk assessment and (4) dual protection.

Adaptation of the BCS involved the inclusion of additional information on STI/HIV:

- The three key behavior change messages were stressed: A B C (abstain, being faithful and/or using a condom). Abstaining refers to secondary abstinence in this case as family planning users are assumed to be sexually active. In South Africa, because a quarter of FP clients are under 19, it is especially important to explain that secondary abstinence is still an option.
- Promotion of dual protection by providing information on the concept of dual protection, strengthened promotion of the condom, highlighting that hormonal methods and sterilization do not protect against STIs, and stressing correct and consistent condom use.
- Risk of STI/HIV was explored on an individual basis during the balanced counseling and dual method use and the correct and consistent use of condoms was to be stressed. The STI/HIV and dual protection messages were also reinforced during C&T counseling.
- This approach to FP was adapted in both models to ensure that clients are given a choice of FP methods and to ensure that standardized FP messages and integration of STI/HIV risk information are provided in both models. This was also done to minimize provider bias in the promotion of contraceptive methods.

Training strategy

The training task team consisted of the representatives from the NDOH, NWP DOH, the Reproductive Health & HIV Research Unit (RHRU) of the University of the Witwatersrand and the Population Council. One training session per province was conducted in each districts. The training team comprised of all representatives from the training task team. FP service providers from both Testing and Referral sites were trained on FP methods, STI/HIV risk assessment and reduction, and dual protection. Providers from the testing sites received an additional session on pre and post- test counseling for HIV and how to conduct and interpret a rapid HIV test.

A total of 129 service providers, including local area service managers, were trained on how to integrate HIV prevention and C&T into FP using the *BCS-Plus* tool. The duration of training varied by the Referral and Testing Model**:** three days training was conducted with 56 providers who were to implement the Referral Model; and four days training, which included C&T, was conducted with 73 providers who were to implement the Testing Model. Training focused on service integration but also included updates in FP method effectiveness, WHO eligibility criteria, STIs and HIV, reproductive rights, informed choice and consent, safe sex and dual protection, values clarification, risk assessment and reduction, and referral. These training workshops were held between April and June 2005.

Strengthened supervision

Continuous support and mentoring was provided to ensure that providers adapted to these new practices at their facilities until competency was gained and a minimum standard of quality of service was achieved. A supervisory tool was developed and used to regularly monitor both practice and to facilitate follow-up and supportive supervision. The intervention clinics were visited on alternative months for the three-month period of introduction. Observation of the clinic structure, availability of supplies and equipment, FP consultation and the progress on the intervention, and challenges were discussed with clinic staff. Clinic supervisors' meetings were held during these support visits to provide a platform for sharing lessons learned from individual clinics and peer support efforts. On the spot training was conducted where there were gaps. Regular supplies of the IEC materials on the different methods of contraception were delivered to all twelve clinics. The research team also attended lay counselors' monthly meetings to ensure ongoing support and communication.

EVALUATION METHODOLOGY

Study design

The study design used a three arm cluster randomized control trial with two intervention arms with six clinics in each and one comparison arm in six clinics which continued to provide services following the current FP practices and guidelines. In total 18 clinics were involved in the study.

Data collection

The sample sizes for pre and post intervention measures were 540 client-provider observations and client exit interviews, that is, 30 client-provider observations and 30 client exit interviews per facility. However due to the varying FP client loads, the desired sample size could not be reached. Baseline data collection took place in December 2004, with 338 family planning clients in the 18 clinics, and endline data collection from 366 clients in December 2005.

Eligible participants were FP clients aged 18 and above, both first visit and repeat clients. All participants expressed willingness to be involved in the study and signed informed consent forms before participating and were free to terminate their participation at any point if they wished to do so with no adverse effect on the level or quality of services provided for clients or supervisory sanctions for providers.

During the pre-intervention phase, one client FGD was held for each district. Three of the 21 clinics were randomly selected, and at each clinic six to ten FP clients were asked to participate in a FGD. Clients were asked to comment on the current challenges to the provision of FP care, their perception of the quality of care, access to C&T services, factors affecting C&T uptake and access, and the feasibility and acceptability of integrating C&T and FP services. The post-intervention clients FGDs were conducted in four facilities that had implemented the interventions; the questions addressed the same issues as in the baseline in order to gauge the effect of the interventions from a client perspective.

In addition, pre- and post-intervention FGDs were conducted with providers to assess the acceptability of the interventions in the three districts. Three clinics were randomly selected, one clinic from each sub-district. Providers were asked to comment on the current challenges to provision of FP care, their perception on the quality of care, current provision of services, contribution of FP services in combating HIV and STIs, attitude towards people with HIV or with AIDS, the cost of FP/STI services, and the acceptability of integrating services.

Cost data

A systematic effort was made to gather cost information retrospectively and prospectively. Tools were developed to monitor resource use during the implementation and service delivery phases of the project. Costs were assessed from the perspective of the Department of Health, treating the 18 clinics as a representative sample. A four-step process was used to estimate costs:

1) Identification of all resources used;
2) Measurement of the quantity of resources used in their natural units;
3) Assigning units costs to each resource used in any of the service delivery activities; and,
4) Multiplying the resources used in each of the eighteen clinics by unit costs to estimate the cost of implementation of the service delivery models.

The final step was to compare resources used in the two sets of intervention clinics to the comparison clinics to estimate the incremental cost per clinic to the health system associated with the integration of services. Additional costs to the clients or their families for items such as transport to obtain referral services were not considered.

Data management and analysis

All quantitative data was entered in Epidata, and analyzed using Stata 8 (statistical software). Client characteristics were compared at baseline and any differences observed were adjusted for when making comparisons post intervention. Qualitative data were analyzed manually using thematic analysis techniques.

Ethical issues and consent

Study approval was received from the Population Council Institutional Review Board (IRB), the University of Witwatersrand Medical Ethics Committee and the North West Province Department of Health. Guidance on ethical issues, including informed consent for study participants, informed consent for C&T clients and issues pertaining to confidentiality, were observed and adhered to during implementation of the study. Additional emphasis was placed on ensuring that clients in all three arms of the study received the information and services they needed to preserve their health and meet their family planning needs.

RESULTS

Acceptability of integration to clients and providers

Acceptability to Clients

Findings from the FGDs with clients post-intervention highlighted that clients liked the fact that they were offered C&T during their FP consultation. During the FGDs, most FP clients expressed that they liked the integration of C&T in their FP service because it got them thinking about HIV. Even though they were sexually active and were accessing contraceptives, they had not thought about doing the HIV test. One client reported, "*… Sometimes you just tell yourself that I am taking contraceptive pills even though I am sexually active. You don't even have the thought of doing the test, it doesn't even click in your mind. Maybe you do not even know that HIV test is available."*

FGD participants felt that C&T was good for them because it gave them the opportunity to know their HIV status. Furthermore clients felt that counseling on STI/HIV, C&T, risk assessment and dual protection during consultation helped them address misconceptions about HIV and AIDS and condoms. They also emphasized that counseling on dual protection gave them a better understanding of the importance of condom use while using another contraceptive. One client reported, "*I think it helps a lot to use both of them, using a method helps to prevent an unwanted baby and using a condom help in protecting oneself in sexually transmitted infections like HIV/AIDS*."

Most clients referred to their sexual behavior as private or a secret that they could not share with anyone but a trustworthy person. However, most of them mentioned that they feel free to discuss their sexual behavior with FP providers. One client thought, *"… it will not be a problem, I can discuss my personal sexual life with my provider. I know that I am going to get help if I've got problems with STIs."*

Although clients were counseled about C&T, most mentioned that they were not ready to test for HIV. The key reason for not testing was based on fear to know their status especially if positive. For some this meant fear that they might not get support from their family and their partners, while for others they do not want to be tested by counselors that they know from the community. One client confided, "*I'm afraid of stress, knowing that I am going to die it won't be easy.*"

Most clients preferred to test for HIV with a private doctor, or in a clinic far away from their communities where they are not known. Clients were more concerned about confidentiality of their HIV status and how they would be viewed by the FP health providers on their next visit if they tested positive. Two family planning clients acknowledged, "*I would like to test far from here so that my secret can be safe, the people there should not know me." And "… we don't want to test because we are afraid everybody will know our status."*

However all participants felt strongly that the integration of HIV into FP services is valuable, because it would help to de-stigmatize C&T consultations and would offer clients more than one health service during one consultation. Several clients noted, "*I think it is good if it is integrated with family planning unlike being separated, because I will be embarrassed if people see me coming from the C&T room. Because most people know what is happening in that room*."

"*I think it is best if they are integrated because it is quite difficult to go to the clinic only for C&T, there is nothing that encourages you to go to the clinic, so if it is integrated to family planning you will get two things at the same time*."

"… It will even save us time, if one person does them both. It's better than going in getting your method and going out to somewhere for C&T, you find that person busy, you have to wait all over again."

However some clients did not like to be referred for C&T; they would like the same FP provider to counsel and to conduct the HIV test. One family planning client reported that, "*She is the one who is supposed to know my results to avoid going from pillar to post."* Another said, *"I won't go; (to referral) the nurse should counsel and test me."*

Acceptability of integration to providers

FP providers felt energized and equipped by the intervention enabling them to do STI/HIV risk assessment and to discuss client sexual behavior. They mentioned that their clients open up freely when discussing sexual behavior irrespective of their age. One provider noted, "*Yes, especially in the consulting room they feel free, and the main thing is they are free to tell you everything. Those who come to me feel free, I just talk, and you know I am talking off the record".* Some FP providers, however, raised challenges they experienced discussing condom use with their clients. One provider highlighted that condoms are socially unacceptable for married couples in the community they serve.

Generally, FP providers felt strongly that ongoing counseling of FP clients about HIV and importance of C&T will increase the uptake of HIV testing. Most providers from the intervention sites mentioned that the discussions about counseling and testing raised many questions about HIV. Although some clients have not consented to do the HIV test, they started talking about it.

One provider noted, "*I think they are testing more because they are getting more aware. I think that HIV questions come to you, never stop answering them, those clients are the ones that always ask you even if they don't test but they are interested in the topic. Even when they decide to test they will be informed. I think the more it is talked about, the more people are likely to test, even if they do it the very same day."* Another indicated that, *"... to do the HIV test is not like, you hear about it now. Maybe the more you are told about it, the more you can take that decision; you cannot take that decision on the spot. It is something you hear about for a while."*

Providers suggested that BCS + should also include simple guidance for rape assessment and also tips or guidance they can give to clients whose partners refuse to use condoms. FP providers also expressed the need for a values clarification workshop that will help them address their attitude towards clients who do not want to use dual protection. They confessed that sometimes they become irritated when clients refuse to comply with their reproductive health advice.

Effect of interventions on quality of care

This section will present the findings from client-provider observations that measure the quality of care received in terms of five summary indicators and then describe client behaviors that were intended to be changed by the intervention:

1) Quality of STI/HIV risk assessment (0-5)
2) Quality of dual protection and condom use counseling (0-4)
3) Quality of C&T counseling (0-4)
4) Quality of general FP method counseling (0-6)
5) Quality of client-provider rapport (0-7).

Scores for each indicator were created by summing the number of individual items observed during each client-provider interaction and then calculating the mean score across all observations. The sample is limited to individuals containing matching data for both sources to ensure consistency in sample size and client background characteristics.

Quality of STI/HIV risk assessment

Table 4 indicates that at baseline, STI/HIV/AIDS were already being discussed in over half of all consultations (item #3) and there was little improvement after the intervention. Providers implementing the referral model were significantly more likely to discuss STI/HIV risk factors with clients after the intervention, whereas those implementing the testing model on improved on discussion of the increased risk of HIV with an STI. As both groups of providers were expected to receive similar training in these issues, there would appear to be other factors influencing this outcome. One possible reason is that the testing group had the lowest mean score at baseline.

Table 4: Discussions of STI/HIV issues with family planning clients

Proportion of consultations in which provider:		Testing		Referral		Control	
		Baseline	Endline	Baseline	Endline	Baseline	Endline
		(N=104)	(N=124)	(N=115)	(N=123)	(N=120)	(N=119)
(1)	Discussed client history of STI symptoms	0.27	0.29	0.46	0.78***	0.46	0.51
(2)	Discussed number of sexual partners	0.22	0.21	0.33	0.60***	0.27	0.47***
(3)	Discussed STI/HIV/AIDS	0.65	0.60	0.80	0.87	0.55	0.57
(4)	Discussed STI/HIV/AIDS risk factors	0.43	0.52	0.56	0.96***	0.51	0.52
(5)	Tells client STI increase risk of HIV	0.18	0.37***	0.38	0.67***	0.50	0.44
Total score (0-5):		**1.74**	**2.00**	**2.54**	**3.91*** **	**2.32**	**2.52**

Note: * denotes significance at the 10% level, ** at the 5% level and *** at the 1% level

Quality of counseling on dual protection and condom use

Table 5 indicates improvements in virtually all items concerning dual protection and condom use for all groups of observations. The significant improvements in the control group probably reflect the national campaigns to promote condom use, and there appears to be little additional value gained from exposure to the intervention in the two experimental groups. Once again, the testing group had the least improvements across all items.

Table 5: Counseling and provision of condoms

Proportion of consultations in which provider:		Testing		Referral		Control	
		Baseline	Endline	Baseline	Endline	Baseline	Endline
		(N=104)	(N=124)	(N=115)	(N=123)	(N=120)	(N=119)
(1)	Explains condoms protect against STIs/HIV and pregnancy	0.17	0.37***	0.26	0.75***	0.49	0.61
(2)	Give information on how to use a condom	0.92	0.35	0.29	0.64***	0.32	0.49***
(3)	Emphasize correct/consistent condom use	0.22	0.37**	0.29	0.63***	0.35	0.52***
(4)	Explains how to negotiate condom use	0.01	0.40***	0.12	0.47***	0.03	0.48***
Total score (0-4):		**0.61**	**1.50*** **	**0.982**	**2.5*** **	**1.20**	**2.11*** **

Note: * denotes significance at the 10% level, ** at the 5% level and *** at the 1% level

Quality of HIV C&T counseling

Table 6 indicates that the strong emphasis on HIV C&T within this intervention did lead to significant improvements during counseling the FP clients, for both the Testing and Referral models. Most impressive were the increases in discussing the client's HIV serostatus – in both intervention groups this increased from 5 – 6% at baseline to 62 – 81% at endline, although it is important to note that there was also a substantial increase in the control group from 16% to 25%. The other notable improvement was informing clients about the window period, especially for the providers in the referral group facilities.

Table 6: C&T services for family planning clients

Proportion of consultations in which provider:		Testing		Referral		Control	
		Baseline	Endline	Baseline	Endline	Baseline	Endline
		(N=104)	(N=124)	(N=115)	(N=123)	(N=120)	(N=119)
(1)	Discuss HIV serostatus	0.05	0.62***	0.06	0.81***	0.16	0.25
(2)	Mentions VCT	0.39	0.79***	0.47	0.97***	0.32	0.45**
(3)	Discuss what the test tells client	0.27	0.54***	0.24	0.85***	0.32	0.43*
(4)	Explain about the window period	0.09	0.38***	0.01	0.78***	0.29	0.27
Total score (0-4):		**0.81**	**2.35*** **	**0.78**	**3.42*** **	**1.11**	**1.42**

Note: * denotes significance at the 10% level, ** at the 5% level and *** at the 1% level

Quality of FP Counseling

One concern frequently expressed about integrating services is that adding additional services to the FP service may reduce the quality of FP counseling. As can be seen in Table 7, there were no significant differences in the quality of care scores for either intervention group, which suggests that adding the HIV services have not adversely affected the FP service. Discussion about previous use of FP and, for the referral group, providing clients with a choice, did decrease but this was balanced by improvements in some other items. A notable improvement was in discussion of reproductive intentions, which increased significantly in both experimental groups but declined significantly in the control group.

Table 7: Proportion of consultations in which family planning issues were covered

Proportion of consultations in which provider:		Testing		Referral		Control	
		Baseline	Endline	Baseline	Endline	Baseline	Endline
		(N=104)	(N=124)	(N=115)	(N=123)	(N=120)	(N=119)
(1)	Discussed reproductive intentions	0.15	0.29**	0.26	0.60***	0.38	0.20***
(2)	Discussed previous use of FP	0.66	0.47**	0.86	0.61***	0.55	0.77
(3)	Discussed 2 or more methods	0.11	0.08	0.12	0.15	0.11	0.10
(4)	Provided with choice regarding preferred method	0.79	0.77	0.95	0.73***	0.83	0.83
(5)	Discussed how chosen method works	0.49	0.53	0.48	0.64**	0.61	0.68
(6)	Explained advantages/disadvantages of chosen method	0.45	0.47	0.42	0.60***	0.57	0.67
Total score (0-6):		**2.67**	**2.63**	**3.12**	**3.34**	**3.07**	**3.27**

Note: * denotes significance at the 10% level, ** at the 5% level and *** at the 1% level

Quality of client-provider rapport

Table 8 shows that the additional counseling on STI/HIV/AIDS also did not adversely affect the quality of client-provider rapport. Most aspects of a good relationship with the client were followed in consultations across all three groups, with some slight variations for certain items.

Of particular interest is the extent to which including the HIV services increased the time spent with the clients. The mean consultation time in the control groups remained constant at 22 minutes for both baseline and endline surveys, whereas for the testing group it increased from 16 to 18 minutes and for the referral group from 21 to 25 minutes.

Table 8: Proportion of consultations in which client-provider rapport was established

Proportion of consultations in which provider:		Testing		Referral		Control	
		Baseline	Endline	Baseline	Endline	Baseline	Endline
		(N=104)	(N=124)	(N=115)	(N=123)	(N=120)	(N=119)
(1)	Client greeted warmly	0.97	0.95	1.00	1.00	0.99	0.97
(2)	Discussed medical conditions	0.40	0.42	0.34	0.68***	0.56	0.77***
(3)	Asked if client understood information	0.67	0.59	0.87	0.83	0.65	0.64
(4)	Encouraged client to ask questions	0.65	0.58	0.80	0.95***	0.66	0.68
(5)	Used client's name	0.78	0.63**	0.92	0.91	0.97	0.81***
(6)	Help in decision-making	0.67	0.64	0.76	0.69	0.58	0.70*
(7)	Consultation time was > 15 minutes	0.44	0.55	0.70	0.79*	0.55	0.64
Total score (0-7):		**4.60**	**4.41**	**5.41**	**5.87*** **	**4.99**	**5.25**

Note: * denotes significance at the 10% level, ** at the 5% level and *** at the 1% level

Summary of the Quality of Care Indicators

Summary scores for the quality of care indicators are highlighted in Table 9 below. The baseline scores highlight that the testing facilities started with lower quality of care scores overall than the referral and control facilities. Although the control facilities had no training or support from the study team during the intervention implementation period, the endline survey shows a notable improvement in the quality of counseling. There was a statistically significant improvement in dual protection counseling across all three groups. The referral model showed significant improvements in four of the five indicators and the testing model showed improvements in two indicators. Overall, both groups demonstrated significant improvements, which is probably attributable to use of the BCS+ tool.

Table 9: Summary measures of quality of counseling

		Testing		Referral		Control	
		Baseline	Endline	Baseline	Endline	Baseline	Endline
		(N=104)	(N=124)	(N=115)	(N=123)	(N=120)	(N=119)
1)	Total score – FP method counseling (0-6)	2.67	2.63	3.12	3.34	3.07	3.27
2)	Total score – Client-provider rapport (0-7)	4.60	4.41	5.41	5.87***	4.99	5.25
3)	Total score – STI prevention counseling (0-5)	1.74	2.00	2.54	3.91***	2.32	2.52
4)	Total score – Dual protection counseling (0-4)	0.61	1.50***	0.98	2.50***	1.20	2.11***
5)	Total score – VCT counseling (0-4)	0.81	2.35***	0.78	3.42***	1.11	1.42
Total score (0-26):		**10.46**	**12.90****	**12.85**	**19.07*****	**12.70**	**14.59***

Note: * denotes significance at the 10% level, ** at the 5% level and *** at the 1% level

Changes in client behavior

Table 10 highlights findings from the client exit interviews concerning their self-reported sexual behaviors. The Table indicates that, overall, these five behaviors changed significantly in both intervention groups, while not changing at all in the control group. The only behavior that changed in all groups was the proportion of clients who reported currently using a condom with another contraceptive method, which increased dramatically from 5-10% at baseline to 35-50% at endline.

Table 10: Effectiveness of intervention on client behavior change

Proportion of clients reporting:		Testing		Referral		Control	
		Baseline	Endline	Baseline	Endline	Baseline	Endline
		(N=104)	(N=124)	(N=115)	(N=123)	(N=120)	(N=119)
(1)	Used condom at last sex	0.27	0.35	0.41	0.45	0.45	0.39
(2)	Used condom in last month	0.13	0.24**	0.23	0.27	0.30	0.20
(3)	Using condom with contraceptive method	0.05	0.35***	0.10	0.50***	0.05	0.40***
(4)	Ever had HIV test	0.25	0.29	0.28	0.39*	0.32	0.27
(5)	Client tested at the same facility	0.14	0.15	0.07	0.17**	0.13	0.15
Total score (0-5):		**0.87**	**1.40*** **	**1.11**	**1.79*** **	**1.27**	**1.41**

Note: * denotes significance at the 10% level, ** at the 5% level and *** at the 1% level

One item of programmatic importance is that for the referral model, the proportion indicating that they had been tested at the same facility increased from 7% to 17%. This suggests that there may be a preference to have a referral within the same facility rather than have the same provider do the testing.

As can be seen in Table 11, although the proportion of consultations in which providers mentioned C&T significantly increased in the control group (probably due to some contamination between facilities), it increased much more in the two intervention groups; by the time of the endline survey, 79-97 percent of clients in the intervention facilities heard about C&T. This also translated into an increase in the proportion of clients being offered and HIV test, especially by the providers in the referral facilities.

Table 11: Proportion of clients deciding to have an HIV test

Proportion of consultations when:	Testing		Referral		Control	
	Baseline	Endline	Baseline	Endline	Baseline	Endline
	(n=104)	(n=124)	(n=114)	(n=123)	(n=120)	(n=119)
Provider mentioned C&T	40	79***	47	97***	32	45**
Provider offered C&T	14	20	16	29**	5	6
Client decided to have C&T	9	19**	7	25***	1	5**

Note: * denotes significance at the 10% level, ** at the 5% level and *** at the 1% level

The proportion of clients offered C&T who then decided to have a test also increased over time, so that by the endline survey 19-25% of clients in the intervention facilities had decided to have an HIV test, compared with 7-9 percent at baseline. It is important to note also, that there was

also a significant increase in control facilities, albeit from one to five percent. Both the testing and referral models seem to have proved effective, therefore, in increasing the proportion of FP clients who have and HIV test. One important limitation of this study, however, is that it was not possible to confirm whether or not the clients deciding to be tested actually had the test.

Cost analysis

The incremental cost comprised the additional training for the service providers at the intervention clinics. Training was more intensive for the Testing Model clinics compared to the Referral Model clinics. The Testing Model training required, on average, an additional investment of 43,274 Rand ($6,800) per clinic, while the Referral Model integration training required an additional investment of 30,831 Rand ($4,800) per clinic.

DISCUSSION

The results of the study indicate that the integration of HIV prevention education and the routine offer of testing in FP consultations are feasible, acceptable and effective in changing reported behaviors when compared to the existing quality of FP services. Key quality of care scores, namely STI prevention counseling, dual protection, condom use counseling, C&T counseling, general FP method counseling, client-provider rapport and client behavior change showed changes, albeit not always statistically significant, when pre-intervention scores are compared with post-intervention scores. Both models give an opportunity to many clients to access HIV counseling and testing services, who may not otherwise be able to, or who may find it too stigmatizing to do so through stand-alone services.

The facility inventory and provider interviews at baseline demonstrated that the integration of STI/HIV/AIDS risk assessment, counseling on dual protection, counseling and testing for HIV within the FP services would be feasible. All facilities had adequate resources, equipment, supplies, human resources and client load required for integrating programs into FP services. Furthermore the buy-in and support from National and provincial Department of Health for the intervention made it more feasible for the integrated service models to be implemented. FP providers' willingness to participate and their enthusiasm for providing the integrated programs prior to training enabled different stages of the project to take place smoothly.

The post-intervention FGDs with FP clients showed that they welcomed the idea of integration of STI/HIV/AIDS risk and sexual behavior assessment, counseling on HIV testing into family planning services. Most felt that the discussions with providers enable them to start thinking about knowing their own status and their sexual risk behavior. Although FP clients expressed preference to test at a private practitioner or far from their local clinics due to fear and assumed lack of confidentiality from providers they know, most mentioned that they liked integration of C&T into FP services and provision of these services should continue. The FP providers accepted the integration and felt strongly that it will contribute in uptake of HIV testing if applied consistently among all FP clients. Furthermore providers acknowledge that the training capacitated them with ability to discuss sexual issues with their clients freely and it assisted in improving client provider relation. Lastly provider experience with clients raised a need for new themes i.e. rape assessment and guide on how to deal with partner who refuse condom use, to be included in the BCS for better client services.

At baseline, STI/HIV/AIDS were already being discussed in over half of all consultations and there was little improvement after the intervention. Providers implementing the referral model were significantly more likely to discuss STI/HIV risk factors with clients after the intervention, whereas those implementing the testing model on improved on discussion of the increased risk of HIV with an STI. There were improvements in virtually all items concerning dual protection and condom use for all groups of observations. Significant improvements in the control group probably reflect the national campaigns to promote condom use, and there appears to be little additional value gained from exposure to the intervention in the two experimental groups.

The strong emphasis on HIV C&T did lead to significant improvements during counseling the FP clients, for both models. Most impressive were the large increases in discussing the client's HIV serostatus (from 5 – 6% at baseline to 62 – 81% at endline), although there was also a substantial increase in the control group (16% to 25%).

There were no significant differences in the quality of FP counseling scores for either intervention group or in the quality of client-provider rapport, which suggests that adding the HIV services have not adversely affected the FP service. Discussion of reproductive intentions increased significantly in both experimental groups but declined significantly in the control group. The mean consultation time in the control groups remained constant at 22 minutes for both baseline and endline surveys, whereas for the testing group it increased from 16 to 18 minutes and for the referral group from 21 to 25 minutes.

The baseline scores highlight that the testing facilities started with lower quality of care scores overall than the referral and control facilities. Although the control facilities had no training or support from the study team during the intervention implementation period, the endline survey shows a notable although non-significant improvement in the quality of counseling. There was a statistically significant improvement in dual protection counseling across all three groups. The referral model showed significant improvements in four of the five indicators and the testing model showed improvements in two indicators. Overall, both groups demonstrated significant improvements, which is probably attributable to use of the BCS+ tool.

Reported behaviors for condom use by clients changed significantly in both intervention groups, while not changing at all in the control group. The only behavior that changed in all groups was the proportion of clients who reported currently using a condom with another contraceptive method, which increased dramatically from 5-10% at baseline to 35-50% at endline.

Although the proportion of consultations in which providers mentioned C&T significantly increased in the control group (possibly due to some contamination between facilities), it increased much more in the two intervention groups. This also translated into an increase in the proportion of clients being offered and HIV test, especially by the providers in the referral facilities. The proportion of clients offered C&T who then decided to have a test also increased over time, so that by the endline survey 19-25% of clients in the intervention facilities had decided to have an HIV test, compared with 7-9 percent at baseline. There was also a significant increase in control facilities, albeit from one to five percent. Both the testing and referral models seem to have proved effective, therefore, in increasing the proportion of FP clients who have and HIV test. One important limitation of this study, however, is that it was not possible to confirm whether or not the clients deciding to be tested actually had the test.

Both models could be implemented interchangeably depending on the client's choice, structure of the facility and the availability and skills of the staff. The quality of the family planning service did not decline when HIV services were integrated; however, there is the opportunity to further strengthen FP services in Phase II. Use of the *BCS-Plus* tool was found to be useful in facilitating the integration of HIV activities especially risk assessment for STIs/RTIs and HIV and helping clients make informed choice about the various HIV/RH services. Overall there was a notable, though not significant, improvement in the C&T uptake among family planning clients, provider-client rapport, and the consistent use of the condom after the intervention, more so for the Referral Model

UTILIZATION

The study findings, lessons learned, challenges and recommendations from this study has informed the second phase which has refined the intervention to address weaknesses identified in Phase I, including status-specific care and strengthened referrals. Recommendations from both clients and providers have played a major role in guidelines and job aids development for sexual and reproductive health services. Feedback from a dissemination workshop showed that neither the Referral Model nor the Testing Model was preferable, but was informed by the clients' individual preferences, availability of providers to offer the service, and workload.

STUDY LIMITATIONS

According to the study protocol, the target sample size for both client-provider observations and client exit interviews was 540, but due to the varying FP client load and the timing of data collection, this target could not be met. Another limitation was that the control facilities were in the same districts as the intervention facilities, which meant that the rotation of staff from intervention to control facilities could not be prevented and the control facilities had the same DOH supervisors as the intervention facilities. Furthermore, in all districts there were monthly meetings at which all clinic service providers meet to discuss progress, obtain updates from their managers and address challenges. There is a possibility that during these meetings information about the intervention activities could have been shared.

Rotation and relocation of trained FP provider on integration from the intervention sites created a huge gap in terms of the implementation. Furthermore the placement of new untrained providers at the intervention sites contributed towards an uneven process of implementation. Staff shortages played a major role in provider's decisions on providing integrated service.

CONCLUSIONS AND RECOMMENDATIONS

In conclusion, the integration of HIV prevention risk assessment counseling and testing for HIV and dual protection within family planning services in public facilities in South Africa is feasible and acceptable to both FP providers and clients. Integration of HIV prevention, counseling and testing within FP services is effective in improving the overall quality of care and in increasing HIV testing and possibly condom use. The Testing and Referral Models were similarly effective and can be adapted interchangeably depending on client needs and preferences and the skills of the providers. However neither of the two intervention models is demonstrably better than the other.

Considering the policy context and the evidence from this study, the following recommendations are proposed:

- Counseling of all FP clients about STI/HIV/AIDS risk behaviors and prevention can address common misconceptions, and provides the opportunity to engage with clients about their sexual behavior and interest in HIV testing.
- Client preference for location of HIV testing should be respected and clients should be able to access services in the facility where they receive FP services or through referral.
- To assure the quality and effect of integrating services at the district level, it is important that records are kept and reported that describe the HIV services provided during FP consultations.

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