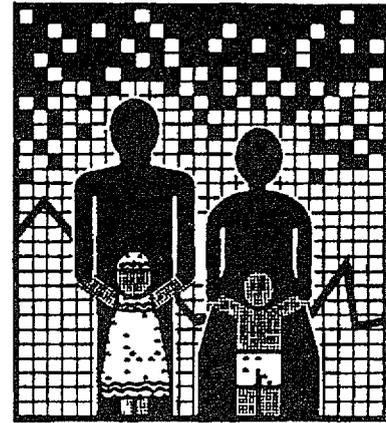


July 1997

PII-ACC-186  
102889



**OPERATIONS  
RESEARCH**  
TECHNICAL ASSISTANCE

AFRICA PROJECT II

THE POPULATION COUNCIL

# Integrating STI/HIV Management Strategies into Existing MCH/FP Programs

Lessons from Case Studies in East and  
Southern Africa

Baker Ndugga Maggwa  
Ian Askew

Africa OR/TA Project II  
The Population Council  
Nairobi  
Kenya

## **Africa OR/TA Project II**

The overall objective of the Africa OR/TA Project II is to broaden understanding of how to improve family planning services in Sub-Saharan Africa, and to apply operations research and technical assistance to improve services by

- increasing access to a full range of family planning services and methods,
- developing service delivery strategies that are client-oriented and acceptable to various population groups,
- improving the operations of programs to make them more efficient and financially sustainable,
- improving the quality of services,
- strengthening the capabilities of family planning program managers to use operations research to diagnose and solve service delivery problems

## **The Population Council**

*The Population Council seeks to help improve the well-being and reproductive health of current and future generations around the world and to help achieve a humane, equitable, and sustainable balance between people and resources. The Council analyzes population issues and trends, conducts biomedical research to develop new contraceptives, works with public and private agencies to improve the quality and outreach of family planning and reproductive health services, helps governments to influence demographic behavior, communicates the results of research in the population field to appropriate audiences, and helps build research capacities in developing countries. The Council, a nonprofit, nongovernmental research organization established in 1952, has a multinational Board of Trustees. Its New York headquarters supports a global network of regional and country offices.*

*This project was supported by the Population Council's Operations Research and Technical Assistance Project II, Project No 936-3030, and by the Population Council Cooperative Agreement No CCP-3050-A-00-4013-00, both funded by the United States Agency for International Development (USAID)*

## **ACKNOWLEDGMENTS**

The case studies on which this report is based were undertaken with substantial inputs from many people whose assistance we gratefully acknowledge. Special thanks go to the Principal Investigators of each case study: James Wabaru Kariba, the Chief Public Health Officer for the Nakuru Municipal Council, Kenya; Benjamin Baakile, Research Officer and Lucy Sejo Maribe, Head, of the MCH/FP Unit of the Botswana Ministry of Health; Amina Twahir, formerly Medical Director of the Mkomani Clinic Society, Mombasa, Kenya; and Joy Mukaire and Florence Kalikwani at the Family Life Education Program, Busoga, Uganda.

The Africa OR/TA Project II is a cooperating partner in a regional initiative to address FP/STI service integration. The USAID Regional Economic Development Services Office (REDSO/ESA) has coordinated this initiative for East and Southern Africa with funding from USAID's Africa Bureau. We acknowledge the contribution to the development and implementation of these case studies and guidance in developing this synthesis report by the following members of this team: Richard Sturgis, Sophia Ladha and Vicky Wells at REDSO/ESA, Nairobi; Wilson Kisubi and Elizabeth Lule at Pathfinder International; and Lenni Kangas at the USAID Africa Bureau, Washington.

## CONTENTS

Executive Summary	1
1) Background	1
2) Reaching women with STI/HIV services through MCH/FP programs	4
3) Case studies	7
4) Experience with integration	13
4 1) Management of STIs amongst women attending MCH/FP clinics	13
a) Case finding for asymptomatic STIs	13
1) Behavioral risk assessment and clinical history taking	14
ii) Clinical examination	19
General examination	19
Pelvic examination	21
b) Diagnosis of STIs	22
c) Treatment of STIs	26
d) Contact tracing through partner notification	27
e) Counseling and testing for HIV/AIDS	30
f) Screening antenatal clients for syphilis	31
4 2) Improving health-seeking behavior and prevention of new infections	34
a) Information and education in the clinics	34
b) IEC activities in the communities	37
5) A prototype model for integration?	39
6) Recommendations for programme strengthening and suggestions for further research	42
References	50

## EXECUTIVE SUMMARY

### *Background*

Sub-Saharan Africa is experiencing an HIV/AIDS pandemic and some of the highest levels of STIs in the world. The presence of an STI is not only a significant health problem in itself but also increases the risk of sexual transmission of HIV. Until recently, most attention has been directed to controlling STIs in the traditional high risk groups of men, commercial sex workers and, to a lesser extent, adolescents. Evidence that controlling STIs can significantly reduce the incidence of HIV in a population, together with the renewed interest in integrating related reproductive health services, has led many donors, government and non-government MCH/FP programs to promote the integration of STI management services in existing MCH/FP programs. This is seen as a cost-effective strategy for reaching a substantial proportion of the sexually active population with information and services to prevent, detect and treat STIs, thereby reducing maternal and infant morbidity and ultimately reducing the transmission of HIV.

Over the last five years many MCH/FP programs in the region, with the active support of donor and technical assistance organizations, have begun to explore the possibility of re-organizing their MCH/FP services and retraining their staff so that an expanded and "integrated" package of information and services is provided. As with all new approaches to service delivery, efforts to date have been characterized by inconsistency in design, expectation and performance, not least because no clear definition or model of an integrated program exists. Program managers have had very little to guide them beyond a belief that integrating these services is feasible, is acceptable to clients and program staff, is cost-effective, and does not adversely affect the delivery of family planning and MCH services.

The USAID Regional Economic Development Services Office for East and Southern Africa (REDSO/ESA), with support from USAID's Africa Bureau, is coordinating a consortium of technical assistance organizations (Population Council's Africa OR/TA Project II, Pathfinder International, Family Health International's Population Division and AIDSCAP Project, the U.S. Centers for Disease Control and Harvard University's Data for Decision Making Project) that are reviewing the integration of these services from several perspectives. The role of the Population Council's Africa OR/TA Project II within this consortium is to undertake operations research to assess the experience to date and to identify and test alternative approaches to integration.

To date, four systematic case studies have been undertaken of programs that are known to have explicitly developed and implemented an integrated approach. A wide variation in program designs, objectives and locations was selected to represent both urban and rural settings, and to include an NGO effort (Mkomani Clinic Society, Mombasa, Kenya), a church-based initiative (Busoga Diocese Family Life Education Project, Uganda), an urban municipal council program (Nakuru Municipal Council, Kenya), and a national government program (Botswana Ministry of Health). Reports of these case studies have been published separately.

This report synthesizes findings from these four case studies and provides policymakers, program managers, donors and technical assistance organizations with empirical evidence of how an integrated approach has been implemented in different

programmatic, organizational and socio-cultural contexts. It begins by reviewing the rationale for integration and describing the advantages and disadvantages of the approach. Brief summaries are given of the actions taken by the four programs to integrate STI/HIV management services into their existing MCH/FP services. The largest section of the report then describes how the integrated services are being implemented by drawing on data collected through observations of client-provider interactions and clinic facilities, interviews with staff providing the services and managers responsible for the design and implementation of the programs, and reviews of key program documents.

This synthesis reveals that all four programs have, quite independently, developed strategies for integration that have several common components, a prototype model for integrating these services is proposed based on these components. Finally, a number of general recommendations are made for strengthening the implementation of integrated programs that have some or all of these components, and suggestions are given for further operations research which would clarify many of the unknown issues that remain.

### *Approaches to integrating STI/HIV services into existing MCH/FP programs*

All four programs are primarily clinic-based although all have community-based components. Probably as a consequence of this, the focus of their integration activities has been on the detection, diagnosis and treatment of STIs among the family planning and antenatal clients attending their MCH/FP clinics. It appears that most attention is paid to new family planning and first-visit antenatal clients.

All four programs have sought to introduce **case finding** procedures that would enable their staff to identify those clients who may be at risk of an STI and/or who show signs and symptoms of an STI. These procedures are intended to detect potential cases which may be asymptomatic or which a woman did not realize may be an STI, and include behavioral risk assessment, clinical history taking, general physical examination and, where possible, a pelvic examination.

**Clients' awareness of symptoms** associated with STIs, their ability to identify and describe them, and providers' ability to understand clients' descriptions of symptoms are poor and need to be improved through IEC activities within clinics and, where possible, through community-based programs. Staff need to be trained in local terminology and concepts used to describe potential signs and symptoms.

**Risk assessment and clinical history taking** are not performed consistently or according to guidelines. Staff need training in discussing sexual behavior and STIs with clients and service delivery guidelines need to be revised to take into account the potential difficulties faced by staff in doing this. Clear written guidelines/checklists that specify exactly which questions to ask and how to interpret the answers would be helpful, but these must be reviewed and updated regularly, preferably based on observations of staff performance and validation studies. MCH/FP client record cards need to be revised so that risk assessment and STI-related clinical history data can be recorded. The effectiveness of risk assessment for case finding and for improving diagnosis needs further research.

A thorough **general clinical examination and a pelvic examination**, essential for detecting signs and symptoms associated with STIs, are not always undertaken, the need for

staff to undertake these needs reinforcement. Most clinics had the basic equipment and supplies needed for an internal pelvic examination, but these facilities must be maintained. Staff would benefit from training in providing appropriate psychological support to reduce client nervousness. The existing policy guideline that an internal pelvic examination be undertaken for all new family planning clients, annually for all returning family planning clients, and for all MCH/FP clients with symptoms and signs associated with STIs and/or assessed to be at risk needs to be reinforced.

For women showing signs and/or symptoms suggestive of an STI, the four programs have trained their staff to use the **syndromic approach for diagnosis and treatment** because of poor access to and high cost of laboratory testing facilities. The case studies focused on the feasibility of incorporating the syndromic approach into the clinics' existing procedures and could not address the validity of syndromic management, its cost-effectiveness, or the ethical concerns of possible over-treatment. Staff had been trained and the algorithms were on display for guidance, but many staff had problems following the algorithms correctly, and were faced with drug shortages or bureaucratic barriers which prevented them from completing the treatment without having to refer the clients to a doctor. Program managers should constantly monitor new developments in syndromic approach procedures and update their guidelines regularly, passing on the new information immediately to staff.

**Less straightforward cases are referred** to facilities with laboratories for further testing, but current referral arrangements are time-consuming and frequently the client is lost before diagnosis and/or treatment are complete and so need to be improved. As simpler STI screening tests become available programs should develop the capacity to use them at an increasing number of secondary and even primary level facilities.

The **supply of drugs and their purchase by clients** are major problems in all but the Botswana program. Staff understanding of the different treatments available could be improved and updated regularly. Existing drug supply mechanisms and forecasting/ordering procedures need strengthening to ensure that essential drugs are routinely available at clinics. Sufficient funds must be made available to program managers, through government or donor sources or cost-recovery mechanisms, to maintain a continuous supply. Wherever possible, the client should receive/purchase the drugs at the same clinic to ensure that the correct treatment is provided.

**Partner notification** was included as a component of all the programs, primarily through requesting clients to notify their partners verbally. This approach has proved to be highly ineffective and remains a major problem which needs to be addressed urgently if the successful treatment of the woman is not to be undermined through re-infection by her untreated partner. Sensitive counseling is needed to allow for cases when the infection was not caused by sexual transmission.

All four programs also include education on **HIV/AIDS** within their MCH/FP clinics, and refer potential HIV/AIDS cases for testing and counseling because these facilities and skills are generally not available at this level of clinic.

In line with national policy guidelines, all four programs also offer **syphilis screening for pregnant women**. This service is not effectively implemented, however, because clients have to return later to obtain the results, or go elsewhere for the service, and normally have to pay, all of which deter them from following through on the advice given by staff. The

feasibility and cost-effectiveness of introducing antenatal screening for other STIs (especially gonorrhoea) should be considered given their association with adverse pregnancy outcomes

Although the programs have placed most emphasis on case finding and treatment of asymptomatic family planning and antenatal clients attending the clinics, all four are also making concerted efforts to **inform and educate their clinic clients** and, more importantly, the general population in their clinic catchment areas. If clinic health talks are to continue, however, they need to be strengthened and held more regularly. Clinic managers must better advertise the easy availability and confidentiality of STI/HIV information and services.

Cadres of **community-based workers**, although functioning differently in each program, seek to communicate messages about the signs and symptoms of infection, modes of transmission, ways of preventing or avoiding infection, and what to do if an infection is suspected. These IEC strategies appear to have been quite successful in increasing general awareness of STIs and HIV, but their impact on detailed knowledge of STIs and HIV, on attitudes towards male/female relations, and on sexual behavior remain to be evaluated. Use of the condom should be promoted more strongly, either on its own or possibly in conjunction with another contraceptive method (i.e. dual use).

#### ***Future directions for operations research on integration***

There appear to be two broad priority issues which operations research should be used to address. The *effectiveness* of the approach in correctly finding, diagnosing and treating clients with STIs, and the *cost-effectiveness* of this approach compared with others. Its effectiveness is being questioned because recent studies are showing that the validity of syndromic management, even with risk scoring, may be quite poor. Establishing the validity of syndromic management (with and without risk scoring) in MCH/FP clinic settings is therefore critical. If proved to be acceptably effective, then studies should be undertaken to measure the marginal cost of adding this service, and comparing its cost-effectiveness with alternative strategies for detecting and treating STIs among MCH/FP clients.

The second priority is to evaluate the impact of this approach on reducing the transmission and prevalence of STIs, including HIV, in the general population. This is an important issue for policymakers and donors as it is unknown whether this essentially *curative* approach would have an impact on STI prevalence. Moreover, whether it would be more effective than a *behavior change* approach which focused on providing information and education about prevention of infection is also not known. Indeed, little is known about the impact on STI/HIV prevalence of preventive strategies integrated with MCH/FP programs. These types of studies would be resource-intensive, however, as they require longitudinal surveys with population-based bio-assay measures of STI/HIV prevalence.

## 1) Background

Sub-Saharan Africa is confronting an HIV/AIDS epidemic and consequently virtually all health programs in the region are actively seeking ways of preventing and reducing the spread of this deadly virus. To further compound the problem, the presence of certain sexually transmitted infections<sup>1</sup> (STIs), particularly genital ulcers but also chlamydia and gonorrhea, is known to increase the risk of the sexual transmission of HIV (see Plummer *et al*, 1991, Laga, 1992, Hunter *et al*, 1994, Kapiga *et al*, 1994). Unfortunately the sub-Saharan region also has some of the highest levels in the world of STIs within the general population. Thus the control of STIs is seen both as an important reproductive health care strategy in itself - their immediate symptoms can be acute and the longer-term obstetric and neonatal complications can be extremely serious for women and infants - and as a key strategy in reducing the spread of HIV<sup>2</sup>.

A recent review paper by Adler *et al* (1996) lists the main principles of STI control as

- i preventing new infections
- ii treating those with symptoms of infection
- iii improving health seeking behavior amongst those who self-diagnose as being infected
- iv detection and treatment of those with asymptomatic infection
- v improving STI treatment

---

<sup>1</sup> The focus in this paper is on sexually transmitted infections (STIs). It is recognized that STIs are only one type of reproductive tract infection (RTI) that can affect women, the others being endogenous overgrowths and those caused iatrogenically. In the African context, most programs and providers do not differentiate between sexually transmitted and endogenous infections as the treatment is usually the same and there is the perception, rightly or wrongly, that the majority of infections will have been caused by or are associated with sexual activity.

<sup>2</sup> For example, the Mwanza Intervention Trial in Tanzania (Grosskurth *et al*, 1995) has demonstrated fairly conclusively that early detection and treatment of STIs can significantly reduce the incidence of HIV.

Putting these principles into practice through health care programmes in sub-Saharan Africa remains a huge challenge, however. The purpose of this paper is to describe the findings from a few, selected case studies of efforts that have been made to address this challenge in east and southern Africa. The case studies document the application of these principles in the context of asymptomatic female clients attending MCH/FP clinics.

The use of MCH/FP clinics as one entry point to managing STIs can be criticized for not directly addressing the needs of three “higher risk” populations who do not normally attend these clinics: commercial sex workers, men, and sexually-active adolescents. A strong case can be made for targeting interventions specifically for these so-called “core groups” of high-frequency transmitters (e.g. Piot and Rowley, 1992), it is felt that these are more cost-effective strategies overall because these three groups tend to have above average levels of STI incidence and prevalence, and tend to have more sexual partners. However, they are also difficult to reach through standard health care programs and so special interventions have had to be developed, such as specialist male-oriented STI clinics, information and services for sex workers and their clients, and interventions targeted specifically for other high-risk groups, such as truck drivers, the military and the youth.

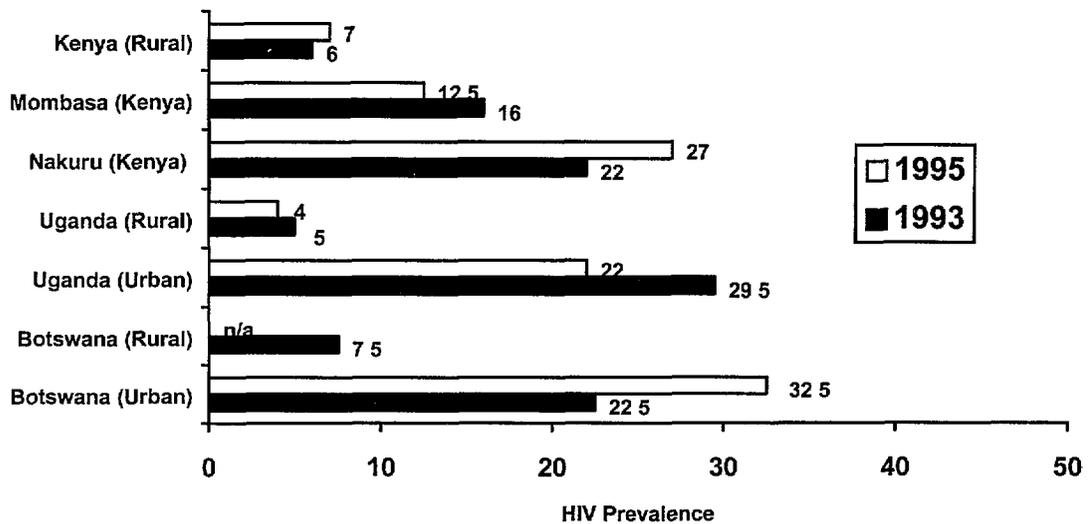
The extensive sexual networking in much of sub-Saharan Africa by males between commercial and non-commercial partners means, however, that they can frequently serve a “bridging” role for infections between the high-risk and general populations, which can push up the likelihood of infection amongst the so-called lower risk groups of women (e.g. Morris *et al*, 1996), such as women attending MCH/FP clinics. Table 1 gives the prevalence of key STIs found among family planning and antenatal clients in east Africa. These and other studies suggest that there is a wide range of STI prevalence levels and that the higher end of the range is not dissimilar to the levels found among higher risk populations (Wasserheit and Holmes, 1992). Consequently, there is not always a clear-cut difference between the low and high risk populations. For HIV in particular, prevalence levels are already very high among antenatal clients in east and southern African countries (see Figure 1), although there are indications of some stabilization in the spread of the pandemic.

**Table 1 Prevalence of STIs among women attending MCH/FP clinics and pregnant women in east Africa**

STI	Nairobi (1991-92) FP clients	Nairobi (1989-91) ANC clients	Rakai (1996) pregnant women	Dar es Salaam (1991-92) FP clients
Gonorrhoea	3.2	7.3-8.9	2.4	4.2
Syphilis	1.9	3.6	7.3	2.5
Trichomoniasis	5.2	-	22.4	14.3
Candida	-	-	-	11.5

Nairobi / FP clients Daly *et al* (1994)  
 Nairobi / ANC clients Temmerman *et al* (1992)  
 Rakai Gray and Wawer (1996)  
 Dar es Salaam Gertig *et al* (1997)

**Figure 1 Prevalence of HIV among antenatal clients at sentinel sites in east and southern Africa, 1993-1995**



Because of their focus on high-risk populations, most STI and HIV control programs have not been designed and implemented to take into account the special circumstances of low-risk women, despite existing knowledge that women are more vulnerable biologically than men to contracting an STI, that the physical consequences of having an STI are more serious for women than for men, and that women are more likely to be asymptomatic than men (Brunham and Embree, 1992, Hunter *et al*, 1993, Daly *et al* 1994, Gertig *et al*, 1997) Reinforcing all of these factors is the low socio-cultural and economic status of women in Africa which ensures that they are often unable to follow the STI and HIV prevention strategies currently being promoted, i.e. reduced number of sexual partners by the woman's partner, use of condoms, and detection and treatment of STIs For women in stable unions in particular, it is usually their partner's behavior rather than their own which is the key determinant of their susceptibility to infection (e.g. Carael *et al*, 1990), and for the vast majority of women in sub-Saharan Africa this is something over which they have little or no control (see Heise and Elias (1995) and Mason (1994) for a fuller discussion)

## **2) Reaching women with STI/HIV information and services through MCH/FP programs**

Reaching the majority of sexually active women in the reproductive age group with information and services that can enable them to more actively control their risk of infection, detect and treat an existing infection, and reduce transmission through sexual partners is, therefore, a key programmatic issue that needs to be addressed *in addition to* interventions targeted at high-risk groups Reaching women through MCH/FP programs (both clinic and community-based) is an approach being actively explored for several reasons

- Prevalence of the common STIs is not insignificant amongst women attending MCH/FP clinics, at least in east and southern Africa There is clearly a sufficiently high level of infection to justify detecting, treating and preventing further infection amongst this population
- Clients attending MCH/FP clinics constitute a numerically much larger population than the high risk groups, and so there are important public health implications for reducing STIs amongst the general population of women

- Most women living in Africa attend MCH/FP clinics fairly regularly for antenatal, child welfare and/or family planning services (see Table 2), and so there are quite frequent opportunities for including STI screening, counseling and education during clinic visits
- MCH/FP services are provided by medically trained staff with many of the same skills needed for managing STIs, and so the additional training needed for them to provide STI management services is minimal
- Transmission of infections from mother to infant during pregnancy and/or childbirth can be greatly reduced by detecting and treating the infection early in the pregnancy

**Table 2 Proportion of women attending a clinic for antenatal care**

Country	Percent of women
Botswana (1988)	92
Kenya (1993)	95
Uganda (1995)	91
Tanzania (1996)	89
Zambia (1996)	92
Zimbabwe (1994)	93

Source National DHS surveys

Clearly a strong rationale exists for developing and testing interventions that integrate STI/HIV management services with existing MCH/FP services. There are, however, a number of equally serious concerns about the feasibility, acceptability, effectiveness and cost-effectiveness of integrating these two currently separate services (see Table 3)

Despite the growing literature on *why* an integrated approach should or should not be implemented (e.g. Mayhew, 1996), very little is known about *how* such services could be integrated in practice and *what happens* when services are integrated. The purpose of this report is to give some insights to program managers, policymakers, and donors by synthesizing the findings from four case studies of programs which have tried an integrated approach. The following section describes briefly the four programs and is followed by a synthesis of the key findings, including. The concluding sections propose a prototype model and give recommendations for program strengthening and further research.

**Table 3 Advantages and disadvantages of Integrating STI/HIV and MCH/FP Services**

Advantages	Disadvantages
1 MCH/FP services are already well established and accepted by clients, providing a credible source of information and services	1 Adding STI/HIV services to MCH/FP programs may overload a relatively weak infrastructure
2 If provided within the context of routine MCH/FP services, a woman can receive STI services anonymously	2 STIs and HIV/AIDS are stigmatized by many communities and adding them to MCH/FP programs might harm the image of these programs
3 Adding STI/HIV services may improve acceptability and utilization of MCH/FP services by broadening clinic functions	3 There are differences between MCH/FP and STI/HIV services that warrant different IEC messages and approaches
4 MCH/FP programs already have experience of providing IEC and distributing condoms, both of which are essential for preventing STIs and HIV	4 MCH/FP services rely heavily on donor funds and adding STI/HIV services may further compromise the viability and sustainability of these programs
5 Both MCH/FP and STI/HIV services are targeted for sexually active women	5 The additional requirement for providing STI/HIV services will increase the overall cost of implementing an MCH/FP program
6 Staff providing MCH/FP services have been trained in most of the basic procedures required to provide STI/HIV health services	6 The fear among staff of cross-infection with HIV, although extremely rare, may lead to failure to carry out proper clinical procedures when providing MCH/FP services
7 The cost to the program and the client of adding STI/HIV services to an existing MCH/FP program are expected to be lower than operating a parallel program for the same clientele	7 An emphasis on barrier methods for STI/HIV prevention may lead to a reduction in use of more effective non-barrier contraceptive methods among couples, with subsequent increase in unwanted/unplanned pregnancies
8 MCH/FP programs have established contraceptive and immunization commodity distribution systems that could be adapted for managing STI/HIV commodities	8 The prevalence of STIs among women attending MCH/FP clinics is relatively low and reducing prevalence within this group may not have a major impact on the overall prevalence
9 Management information systems (MIS) already exist for MCH/FP services and would require minimal adjustments to include STI/HIV services	

### 3) Case studies

The ideal way to address these questions would be to test prospectively a number of alternative integration strategies with rigorous research designs that would provide information on all aspects of their implementation, and on their impact on the prevalence of STI and HIV prevalence in the general population (Langer, 1996)<sup>3</sup> As the Mwanza Intervention Trial has shown, however, this can be an extremely resource-intensive and long-term undertaking. An alternative approach is to undertake case studies of existing and comparable efforts to integrate services and to synthesize the findings (Mayhew, 1996). While the case study approach lacks the control over the intervention design and data collection which is possible in a prospective experimental study, it does allow the real-life experiences of program managers, staff and clients to be documented in a way that can describe the *process* of implementation and give guidance as to the feasibility of an integrated approach.

Although a fairly recent idea, a number of examples do exist of NGO and governmental programs which have sought to integrate some aspects of STI/HIV management services into their existing MCH/FP programs. This paper reports on case studies of four programs where some form of service integration has been attempted. A wide variation in program designs, objectives and locations was selected to represent both urban and rural settings, and to include an NGO effort, a church-based initiative, an urban municipal council program, and a national government program. Each program is described briefly below. These case studies were selected in collaboration with other members of the USAID-supported Regional Integration Partnership for East and Southern Africa<sup>4</sup> under whose auspices this study has been carried out.

---

<sup>3</sup> The Africa OR/TA Project II is planning to undertake two such studies (in Kenya and Zimbabwe) in 1997-1998.

<sup>4</sup> USAID REDSO/ESA, USAID Africa Bureau, Pathfinder International, Family Health International's AIDSCAP Project and Population Division, the US Centers for Disease Control, and Harvard University's 'Data for Decision Making' Project.

The following multi-component methodology was used for conducting the case studies

- Review of available reports and data for each program
- In-depth interview with program managers
- Inventory of facilities, equipment, supplies and drugs available at all program facilities
- Observations of client/service provider interactions where possible
- Exit interviews with clients receiving MCH, FP and STI services
- Interviews with service providers

These data collection instruments were used for three of the case studies, and were based on the standard instruments developed originally for the Situation Analysis approach<sup>5</sup> to assessing the functioning and quality of family planning services. The case study of the Botswana MCH/FP program was undertaken somewhat differently: the national MCH/FP program was assessed through a national Situation Analysis study immediately prior to the introduction of a USAID-supported integration intervention which was evaluated one year afterwards using a modified form of the case study instruments at a sample of clinics and staff trained. Data presented in this report are drawn primarily from the evaluation study. For two of the smaller programs in Kenya (the Mkomani Clinic Society and the Nakuru Municipal Council) it was possible to visit all clinics in the program, but for the Botswana national MCH/FP program and the Busoga Diocese program in Uganda it was necessary to draw a representative sample of clinics. The numbers of interviews, observations and inventories through which data were collected are given on Table 4.

**Table 4: Sample sizes for data collected during the case studies**

Study Site	Clinics visited	Clinic staff interviewed	Community workers interviewed	MCH/FP clients interviewed	Client-provider interactions observed
Busoga, Uganda	17	21	45	117	65
Nakuru, Kenya	7	23	0	72	72
Mkomani, Kenya	2	12	14	36	0
BOTSPA sites, Botswana	25	38	0	164	164

<sup>5</sup> See Miller *et al* (1997) for a full description of this research methodology

## **Mkomani Clinic Society, Mombasa, Kenya<sup>6</sup>**

The Mkomani Clinic Society (MCS) is a private charitable organization founded in 1980. The organization started providing basic curative services, including STI services, antenatal care and child welfare services at one clinic. With donor assistance in 1982, the MCS began providing family planning services in the clinic and started a community outreach program on family planning information and services, which now has 30 full-time Community Service Workers who have a broad reproductive health role. In 1986, a second clinic was established, providing the same services. Both clinics have a basic on-site laboratory and refer more complex cases, including HIV testing, to other laboratories. Until 1992, services were provided separately at different departments within the clinics and on different days. With technical assistance from Pathfinder International, MCS began to integrate STI/HIV counseling and screening into the routine MCH/FP service delivery. This intervention consisted of appointing two extra nurses, in-house training for all nurses in the syndromic approach to STI diagnosis, seminars for all clinic support staff on infection prevention and safe sexual practices, developing protocols and provider guidelines for integrated services, and in-house training for Community Service Workers on STI/HIV transmission and signs / symptoms, safer sex and condom promotion, and strengthening the laboratory facilities to include tests for certain STIs.

---

### **The Mkomani Clinic Society Integration Model**

- 1 Carry out a risk assessment for STI/HIV/AIDS among all clients visiting the clinics for family planning, antenatal and child welfare services,
- 2 Provide information on STI/HIV/AIDS to all clients who receive any services at the clinics or from the Community Service Workers,
- 3 Inform the public about STIs and HIV/AIDS and the availability of services at the MCS clinics through public meetings and seminars,
- 4 Reduce nosocomial and/or iatrogenic infection in clinics,
- 5 Test all ANC clients for syphilis,
- 6 Manage common STI syndromes within the MCH-FP unit,
- 7 Identify and refer all clients with symptoms/signs of HIV infection, or those requesting HIV testing, to institutions with established HIV counseling and testing facilities,
- 8 Carry out partner notification for sexual contacts and treatment for those traced

---

<sup>6</sup> For the full case study report see Twahir *et al* (1996)

## **Nakuru Municipal Council, Kenya<sup>7</sup>**

There are seven public sector clinical facilities in Nakuru town. The Nakuru Municipal Council (NMC) operates five health centers, all of which provide basic antenatal, child welfare, STI and other curative services, four of these provide family planning services. The Provincial Referral Hospital, operated by the MOH, provides MCH-FP and STI/HIV services and has a laboratory, and there is also an STI treatment clinic. Since 1989, all seven facilities have been collaborating in a project with the Department of Community Health at the University of Nairobi, the University of Manitoba, Canada, and the Nairobi City Council. The project is jointly funded by the Canadian International Development Agency (CIDA) and the Kenya Government, and seeks to strengthen the clinic-based management of STIs and HIV/AIDS and to establish sustainable community-based STI/AIDS control activities, with a special emphasis on women's participation. The intervention consisted of training providers in syndromic diagnosis and treatment of STIs, equipping facilities with IEC materials, algorithm flow charts and manuals, supplying drugs for treating STI syndromes, strengthening the laboratory facilities, and introducing a community-based IEC program of peer educators for commercial sex workers and counselors visiting schools and worksites to give talks and provide condoms.

---

### **The Nakuru Municipal Council Integration Model**

- 1 Carry out STI and HIV/AIDS risk assessment and screening for all clients receiving MCH-FP and other services at the health facilities,
  - 2 Provide information, educate and counsel all clients receiving services from the health facilities about STIs and HIV/AIDS,
  - 3 Provide information, educate and counsel hard to reach groups like commercial sex workers, men at the workplace and youth in schools using clinic staff and trained peer educators,
  - 4 Diagnose and treat STIs using the syndromic approach and the algorithms available,
  - 5 Refer clients requiring HIV testing and specialized STI treatment to the STI clinic,
  - 6 Reduce nosocomial and/or iatrogenic infection within the health facilities,
  - 7 Carry out contact tracing and treatment for partners of STI clients,
  - 8 Screen and treat all antenatal clients for syphilis
- 

<sup>7</sup> For the full case study report see Kariba *et al* (1997)

## **Family Life Education Project, Busoga Diocese, Uganda<sup>8</sup>**

The Busoga Diocese of the Anglican Church began the Family Life Education Project (FLEP) in 1986 with support from Pathfinder International. The Project increases access to family planning and other reproductive health services through services at the Diocese's clinics, and through voluntary Village Health Workers (VHWs). All 48 clinics provide family planning, STI/HIV/AIDS counseling and other basic curative services daily, 33 provide child welfare services and 15 provide antenatal care and delivery services. The 162 VHWs counsel, motivate and refer clients for antenatal, postnatal, child welfare, STI and HIV/AIDS services. A team of 20 VHWs trained as 'communication agents' performs drama and songs to communicate locally relevant IEC messages, and FLEP has trained 30 community-based teachers and other leaders to teach in- and out-of school youth about reproductive health issues. Each village has a health subcommittee, whose members are trained to mobilize and manage community resources for the construction and operation of the clinics. FLEP has also provided basic equipment and supplies for providing family planning services. The intervention to facilitate an integrated approach consisted of training all clinic staff and VHWs in HIV/AIDS counseling, and in counseling and management of other STIs, development of risk assessment checklist for clinic staff, establishing a referral arrangement with an NGO for HIV testing and with Government laboratories for other STI tests, and equipping the clinics and VHWs with IEC materials and developing messages for the communication agents.

---

### **The Family Life Education Project's Integration Model**

- 1 Carry out STI/HIV risk assessment for clients receiving MCH/FP services from the clinics,
  - 2 Screen clients receiving MCH/FP services for STIs and HIV/AIDS using a diagnostic checklist,
  - 3 Identify and refer clients requiring HIV testing,
  - 4 Diagnose and treat clients with STIs using the syndromic approach,
  - 5 Inform and educate all clients receiving services from the clinics and VHWs about STIs and HIV/AIDS,
  - 6 Inform and educate the general public about STIs/HIV/AIDS through public meetings, drama and song,
  - 7 Inform and educate in and out-of-school youth about STIs and HIV/AIDS using trained school teachers, community leaders, church leaders and private nurse midwives,
  - 8 Raise awareness and create support for the integrated reproductive health services among the health sub-committees and other community leaders
- 

<sup>8</sup> For the full case study report see Mukaire *et al* (1997)

## **National MCH/FP Program, Botswana<sup>9</sup>**

Family planning, MCH and STI/HIV services were available daily, although separately, at all three levels of the MOH system (i.e. hospitals, clinics, health posts). In 1992, the MOH introduced the syndromic approach to STI management for those clients attending for STI services. The USAID-supported Botswana Population Assistance (BOTSPA) Project sought to improve the quality, availability and integration of MCH/FP/STI services and to expand AIDS prevention measures through an intervention that consisted of the following components: in-service training for all MCH/FP personnel, focusing on clinical skills, FP/STI counseling, reporting and use of data, strengthening the existing MIS to record and report indicators of STI and HIV/AIDS services provided, and commodity requirements, training service providers (nurses at hospitals and clinics and the Family Welfare Educators at Health Posts) in the use of IEC materials, review and revision of the family planning policy guidelines and standards and procedures manual to include STI and HIV/AIDS services.

---

### **The Botswana Population Assistance Project Model**

- 1 Carry out a risk assessment for STI/HIV/AIDS for all MCH-FP clients,
  - 2 Provide information and education on STIs, family planning and relationships between the two to all clients, including promotion of dual contraception,
  - 3 Provide individual counseling for all MCH/FP clients identified to be at risk,
  - 4 Use the syndromic approach to diagnose and manage STIs,
  - 5 Carry out community IEC activities through trained Family Welfare Educators to raise awareness about STIs and HIV/AIDS,
  - 6 Establish STI/HIV/AIDS management teams at "Centers of Competence" and manage referrals from lower health facilities,
  - 7 Practice infection prevention procedures when managing clients,
  - 8 Carry out contact tracing using self-referral cards issued to the index client,
  - 9 Identify and refer clients for HIV testing,
  - 10 Test or refer all antenatal clients for syphilis,
  - 11 Collect, analyze and use data on services at the clinic level
- 

<sup>9</sup> For a full report of the evaluation of the BOTSPA intervention see Maribe, Maggwa and Askew (1997), and for the national baseline Situation Analysis study see Baakile *et al* (1996)

#### **4) Experiences with implementing integrated programs**

The focal point of interaction with women for all the programs is their attendance at the MCH/FP clinic, and so most attention appears to have been paid to developing an approach to integration that focuses primarily on managing STIs among women attending the clinics for family planning and antenatal care. In particular, all four programs have undertaken activities that enable their staff to detect asymptomatic infections among family planning and antenatal clients, to correctly treat or refer those presenting with symptoms of STIs, including HIV, and to improve the quality of STI treatment provided. However, all four programs also addressed, or showed the potential to address, the prevention of new and re-infections and improving the health seeking behavior of those who self-diagnose as being possibly infected through both clinic and community based IEC activities. How the programs undertook these activities within the context of their MCH/FP services is described below.

##### **4 1) Management of STIs among women attending MCH/FP clinics**

###### ***a) Case finding for asymptomatic STIs***

It should be stressed that all four programs focus their attention on finding<sup>10</sup> and managing STIs among women who come for family planning and antenatal services. This approach to integrating services is based on the assumption that *some* women attending clinics for these services will also have one or more STI. Of those women who have an infection, some will know they have the symptoms of an infection but have not yet sought treatment (or are seeking treatment elsewhere), some will have the signs but do not realize that they are symptoms of an STI, and some will be asymptomatic.

All four programs have sought to include procedures for finding potential STI cases among women attending their clinics through a combination of

---

<sup>10</sup> A distinction has been made in the literature between "screening", which is usually undertaken outside of the health facility environment and within high risk groups, and "case finding" which is described as "a process of opportunistic screening for an infection at the time that an individual presents to a health facility regardless of whether they have symptoms suggestive of an STI" (Adler *et al*, 1996: 27). Thus the term "case finding" is used in this report.

- *behavioral risk assessment* through asking the client questions about her and her partner's sexual relationships
- *clinical history taking*,
- and, where possible, *clinical examination*

These case finding procedures (based on identifying risk behavior and clinical signs) have been adopted in these programs because they take into account the limited access to laboratory testing facilities, the high levels of asymptomatic infection, and because for most new family planning clients these same procedures are normally considered standard practice. Data from numerous Situation Analysis studies in Africa (e.g. Miller *et al* 1996) show that revisit clients are rarely asked risk assessment questions or have a clinical history or exam taken. Whether they *should* undergo the same procedures as new family planning clients is an often-debated issue, however, as there are important resource considerations for routinely examining women using resupply methods who may visit a clinic three or four times a year. It should be stressed, however, that very little evidence exists about the effectiveness of behavioral risk assessment and research is needed to assess the validity of the approach before it can be recommended as a best practice.

#### **i) Behavioral risk assessment and clinical history taking**

Case finding through risk assessment and history taking can be undertaken either with or without a clinical examination. Although a clinical exam is clearly preferable, it is possible to undertake limited case finding in situations where, for whatever reason, it is not possible to undertake a pelvic examination<sup>11</sup>. Moreover, the questions routinely asked of a new family planning client include some (but not all) of the behavioral and other risk factors needed for STI case finding. Consequently, the service delivery guidelines for these four programs also recommend asking new family planning clients some additional questions, which are not part of a routine consultation for family planning, to better assess the client and her partner(s) risk of infection.

---

<sup>11</sup> Data from the four case studies and the national Situation Analysis studies in Kenya and Botswana suggest that the majority of clinics do have specula and gloves available, and so in most cases the equipment and supplies needed to carry out a pelvic exam are present.

Each program has developed its own guidelines for training staff that are supposed to enhance their ability to find cases of STI among family planning clients. These are generally based on the service delivery guidelines developed by the country's national STD/AIDS control program. The vast majority of service providers interviewed, however, were not aware that these guidelines existed and did not have written copies.

The risk factors common to all four programs' guidelines that were assessed<sup>12</sup> during the case studies are listed in Table 5 below. Although the number of clients observed was small, the data show quite clearly that few family planning clients were asked about many of these behavioral risk factors. Moreover, the staff from each program appear to put different emphasis on asking different questions. Interestingly, the one question which staff in all four programs asked was the number of sex partners in the last year, suggesting that they are not necessarily afraid of asking questions about sexual behavior.

Although these risk factors were based largely on the national service delivery guidelines for each country, the guidelines themselves were developed originally for use in situations where clients *present with STI symptoms* (e.g. in STI clinics). They may not, therefore, be immediately useful in MCH/FP settings where clients are normally presenting for other services, the prevalence of STIs is thought to be relatively low, and over half of the clients with STIs are probably asymptomatic (Daly *et al*, 1994, Gertig *et al*, 1997). The utility of these risk factors in effectively assisting providers to find asymptomatic cases clearly needs further validation in MCH/FP settings.

---

<sup>12</sup> For the observations a checklist of risk factors was used which was derived from those proposed by two expert groups, the WHO GPA (Mertens *et al*, 1994) and the USAID-supported EVALUATION Project subcommittee on STD/HIV (Dallabetta and Hassig, 1995). Although they may not fit exactly with the items recommended by each program the list provides a basis for comparing across the programs.

**Table 5 Percentage of new family planning clients asked about risk factors**

<b>Risk factors</b>	<b>Mkomani (n=36)</b>	<b>Busoga (n=16)</b>	<b>Nakuru (n=10)</b>	<b>Botswana (n=39)</b>
<b>No of sex partners in past year</b>	14	100	20	26
<b>Client's marital status</b>	0	0	100	51
<b>Partner's other sexual partners</b>	11	0	0	0
<b>Partner's occupation</b>	8	0	0	0
<b>Partner's residence</b>	0	6	0	33
<b>History/presence of STIs in partner</b>	0	19	0	18
<b>History of STIs in client</b>	0	31	30	59
<b>Client's concerns about STIs</b>	0	25	30	61
<b>Condom use by client</b>	14	25	0	0

Why the service providers are not routinely asking all of the risk assessment questions expected for an integrated approach is an essential issue for program managers. Several possible explanations emerged during the case studies. One possibility is that clear instructions on exactly which questions to ask, how to ask them, and the fact that they should be asked of all clients, were not given during training. It appears also that the training materials used, and those given to the providers as reference materials are inadequate. Indeed, apart from the FLEP program which provides a checklist to its clinical staff, written guidelines or a checklist to assist the staff in carrying out the risk assessment were not given out and/or were not generally available.

None of the programs had revised their family planning client record forms to include the additional information collected for behavioral risk assessment and history taking related to STIs/HIV. Consequently, although the providers were expected to routinely collect this information during their interactions with family planning clients, the client record forms did

not have space for recording this information. As a result, providers not only have to remember which questions to ask without the assistance of a checklist or guide, but also have to record the information on a form for which there is no space to do so<sup>13</sup>

Service providers in the busier clinics cited large client loads as a major reason why they did not routinely undertake the full risk assessment / history taking procedures for all family planning and MCH clients. It is unclear, however, how much extra time is actually required to undertake an “integrated” consultation compared with a “family planning only” consultation, particularly if there are only a few, if any, extra questions to be asked. Indeed, it can be argued that these questions should be asked of all new family planning clients anyway, if the provider is to assist the client to choose the most appropriate contraceptive method. The time spent providing a more complete service or more than one service at a time is an issue which arises whenever integration and service quality are being considered. More research is clearly needed, perhaps in the context of a client flow analysis within a cost-effectiveness study.

A lack of auditory and/or visual privacy during consultations was frequently cited as a reason why providers were unwilling to discuss sexual behavior and STIs with their clients. Except for Nakuru, where all seven facilities had separate rooms for counseling and examinations, half of the Busoga clinics, 60 percent of the Botswana clinics and one of the two Mkomani clinics lacked auditory and visual privacy. Whether much can be done about this depends on the physical structure of the individual facilities and the substantial resources frequently needed to improve privacy.

Service providers frequently stated that they know “their clients” well, and cited this relationship as a reason why they did not feel the need to ask about sexual behavior and other risk factors. As a result of not discussing these issues, however, they were found to have some incorrect assumptions about their clients. For example, most providers felt that their clients are not at risk for STIs/HIV, whereas their clients frequently state that they do feel to be at risk -- between 52 - 70 percent of clients interviewed expressed this feeling. Service

---

<sup>13</sup> Following the results of the case studies, the Mkomani and Botswana program managers initiated a review and revision of their family planning client record forms to include STI risk assessment questions so that they can serve as both a checklist and comprehensive record of the client's situation.

providers also feel that their clients would be offended by being asked questions about their sexual behavior, but when clients are asked such questions, they appear fairly willing to answer them

Initiating discussions about STIs can be problematic if MCH/FP clients are not aware of the common symptoms associated with an infection. Almost all women interviewed indicated that they knew of infections that could be transmitted sexually. Table 6 describes the responses given spontaneously when asked to name the symptoms of such infections. These data suggest that overall knowledge of individual symptoms is rather low, and clearly there is a need to strengthen awareness among women attending MCH/FP clinics, and presumably in the general population.

**Table 6 Percentage of MCH/FP clients mentioning symptoms suggestive of STIs**

Symptom	Mkomani (n=36)	Nakuru (n=51)	Busoga (n=117)	Botswana (n=163)
Lower abdominal pain	33	32	56	17
Genital itching	17	27	37	29
Genital discharge	47	45	38	44
Painful urination	39	23	36	34
Genital ulcer	25	23	52	66

There is, however, considerable variation between the respondents in terms of which symptoms they know. For example, genital ulcers were mentioned by two thirds of women in the Botswana sample but by only a quarter of those attending the Mkomani and Nakuru clinics. Whether this reflects geographical variation in the prevalence of the symptoms (and their underlying cause) or differences in perception, definition and terminology for abnormal symptoms of the genitalia is not at all clear (see Olukoya and Elias (1996) for a discussion of these issues in Nigeria).

Whatever the case, for programs that rely on signs and symptoms for case finding it is important that clients have a good knowledge of suggestive symptoms and that there is a

common understanding and definition of symptoms by both clients and staff. This is important so that family planning and antenatal clients can be encouraged to pro-actively identify possible symptoms during consultations and so that providers and clients can discuss symptoms and signs with a common understanding of what is normal and what may be abnormal. It should be borne in mind, however, that the presence of clinical signs does not necessarily mean that a woman actually has an infection and so providers should always be cautious in their interpretation (Bulut *et al* , 1995)

These clients were then asked which symptoms, if any, they had experienced in the previous 12 months. The data on Table 7 show that symptoms associated with STIs are quite common among women attending MCH/FP clinics, and so it is essential that providers routinely ask clients about them and look for them during a physical exam.

**Table 7 Percentage of MCH/FP clients mentioning experience of symptoms in previous 12 months**

Symptom	Mkomani (n=36)	Nakuru (n=51)	Busoga (n=117)
Lower abdominal pain	23	17	57
Genital itching	21	33	25
Genital discharge	26	31	23
Painful urination	9	17	16
Genital ulcer	17	6	15

This does not seem to be happening currently, in Busoga, for example, only one half of clients were observed to be asked about current or past experiences of vaginal discharge and lower abdominal pain, and about one third were asked about genital itching and genital ulcers. Inadequate history taking may be resulting, therefore, in missed opportunities to detect women at risk of having an STI and reduces the efficacy of this approach.

## **ii) Clinical examination**

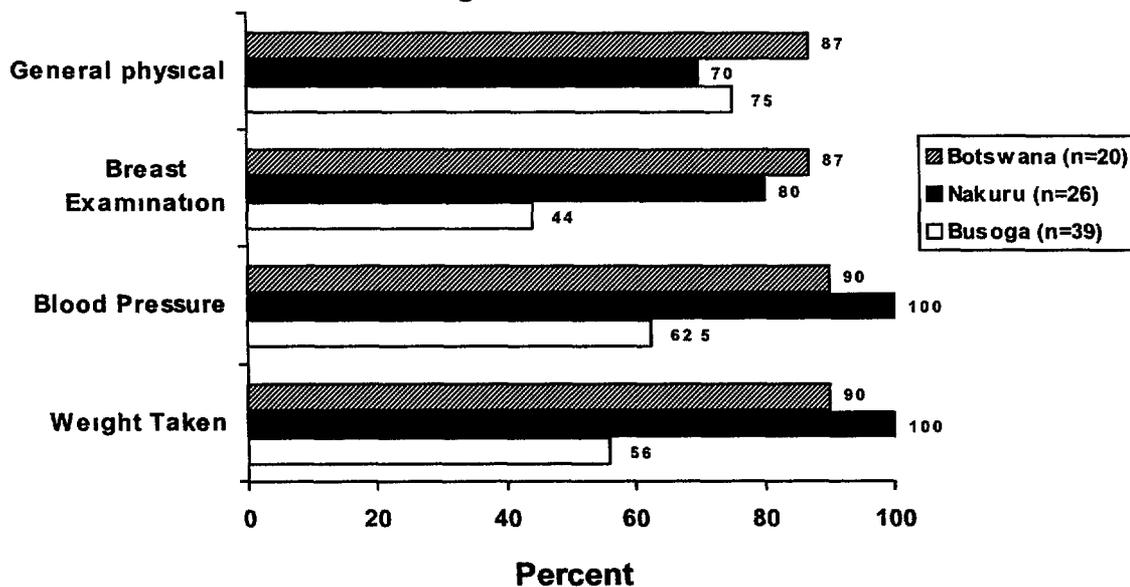
### **General examination**

In all three countries the national family planning service delivery guidelines require that clients choosing to use a medical contraceptive method (e.g. pill, injectable, IUD,

Norplant® implant, sterilization) should have a general physical examination which includes inspection of the skin and mucus membranes, checking for enlarged organs or lymph nodes, and measuring weight and blood pressure. This information is used to decide the suitability of different methods for the client. This general examination also covers all the items necessary to identify those STIs (including HIV) which manifest themselves with generalized physical symptoms like weight loss, anaemia, skin rashes, hair loss and enlarged lymph nodes. A general physical examination is also important for detecting syphilis whose genital symptoms disappear soon after primary infection but whose generalized signs and symptoms stay for long periods.

The extent to which these examinations were performed was encouraging (see Figure 2). For most new family planning client consultations observed, general and breast examinations were carried out and the weight and blood pressure measured. Whether providers were consciously looking for STI symptoms while doing these exams is not known, however.

**Figure 2 Percentage of new family planning clients receiving clinical examinations**



The national guidelines for STI management in all three countries recommend that all clients presenting with STI symptoms should have a general examination to check for other STIs and conditions, infection with more than one STI is not uncommon in this region. However, at the STI clinic in Nakuru, 12 clients presenting with symptoms of STIs were observed, but only two had a general examination. This suggests that when staff are focusing on providing STI services alone, they also do not follow recommended procedures.

### **Pelvic Examination**

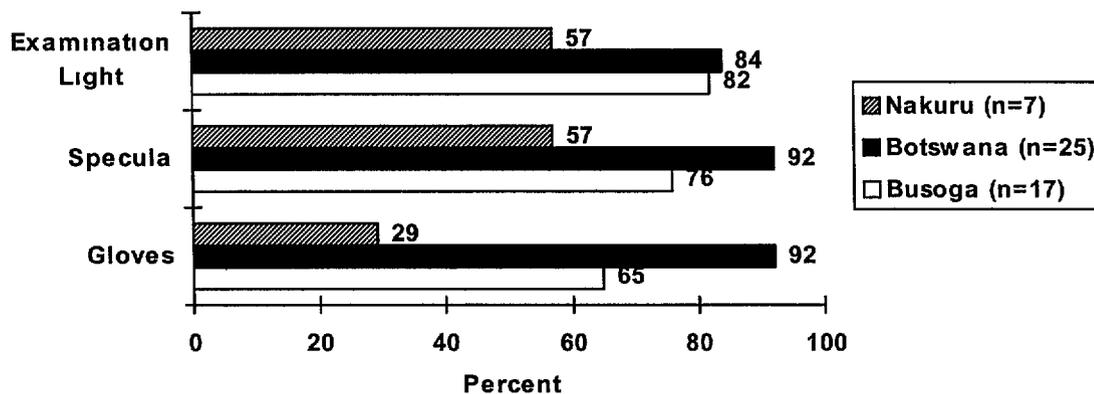
Most programs require or strongly recommend that the provider undertake a pelvic examination for all new family planning clients choosing to use a medical contraceptive method. A full pelvic examination includes inspection of the external genitalia, bimanual palpation, and a speculum examination. A pelvic examination, either external or internal, is clearly a useful additional component to an STI case finding procedure because it can be used to detect, through direct observation, certain signs and symptoms which a woman may have but does not recognize (e.g. Olukoya and Elias, 1996), or which she knows she has but does not want to report verbally. A pelvic exam will also increase the likelihood of the provider finding cases of RTIs which are not necessarily sexually transmitted, such as candidiasis and bacterial vaginosis.

An external examination, if undertaken thoroughly, would allow the provider to find and/or confirm cases of vaginal discharge and genital ulcers, two of the syndromes commonly used during syndromic management. If a provider is also able to carry out a bimanual palpation and a speculum examination, this would allow the identification of intravaginal / cervical ulcers and cervical inflammation. It would also allow a distinction to be made between a vaginal and cervical discharge, which is important for determining the possible aetiological agents for the discharge. Cervical discharges are more likely to be due to gonorrhoea and/or chlamydia, while vaginal discharges are mostly due to candidiasis, trichomoniasis and /or bacterial vaginosis.

The likelihood and feasibility of a provider undertaking a pelvic examination for new family planning clients is dependent, however, not only on their deciding whether it is appropriate for the presenting client, but also on their training and availability of appropriate

equipment and supplies. The proportion of new family planning clients observed to have a pelvic examination varied from a low of 50 percent in Busoga, through 70 percent in Nakuru to 92 percent in Botswana<sup>14</sup>. It is encouraging to note that almost all of the pelvic examinations observed included all three components, i.e. a visual inspection of the external genitalia, internal examination through a bimanual palpation and/or a speculum examination, and were undertaken correctly.

**Figure 3: Percentage of clinics visited having basic equipment necessary for pelvic examination**



**b) Diagnosis of STIs**

Once the provider has established that a family planning or antenatal client has signs and/or symptoms suggestive of an STI, the expectation is that these will be correctly classified into a clinical syndrome and the client will be provided appropriate curative treatment. All four programs implement case management fairly similarly, although there are some differences due to the resources available, the policies and procedures in operation, and the socio-cultural context.

All four case studies use the syndromic approach to make a diagnosis and decide treatment. This approach uses clinical algorithms, in the form of simple flow charts, to identify three broad syndromes of infections in women (plus one in men), classified

<sup>14</sup> In the one case study site (Nakuru) where consultations were observed for 12 clients who explicitly came for STI services, a pelvic examination was carried out for only one client.

according to presenting symptoms and signs. It can be used, therefore, in situations where there are no laboratory testing facilities available. The national STD/AIDS Control Programs in all three countries have adapted the standard WHO algorithms (WHO, 1991) to suit local conditions, and each of the case study programs uses its national guidelines. The only difference between the three national sets of algorithms is the type of medications recommended for treatment.

All guidelines take as their starting point the following three major syndromes of infection in women which can be detected through the verbal and/or clinical examination screening procedures described above:

- vaginal discharge
- lower abdominal pain
- genital ulcers

It should be emphasized that these algorithms were developed for use primarily in STI clinics among clients presenting with known symptoms. In these high prevalence populations the algorithms have acceptable sensitivity, specificity and positive predictive values (PPV)<sup>15</sup>. However, when used in situations where the prevalence of STIs is relatively low and many of the clients are asymptomatic, as may be the case for clients attending MCH/FP clinics, it has been shown that these values can drop substantially (Daly *et al*, 1994, Gertig *et al*, 1997).

Some studies (e.g. Kapiga *et al*, 1997) suggest, however, that the PPV of all four algorithms can be improved through the addition of a behavioral risk "score" to the information gained through the clinical history and/or examination. This score is calculated through weighting<sup>16</sup> and summing the presence or absence of certain behaviors of the client and her partner(s) obtained during behavioral risk assessment and/or history taking. None of the case study programs currently use risk scoring as part of their case finding and diagnosis.

---

<sup>15</sup> *Sensitivity* describes the proportion of true positives detected by an algorithm, *specificity* describes the proportion of true negatives detected, and the *positive predictive value* of an algorithm is the proportion of cases classified as true and confirmed separately that they are truly positive.

<sup>16</sup> The weight assigned to each behavioral risk factor varies by scoring procedure. In some procedures risk factors are assigned equal weights, while others use a weighting scheme based on the adjusted odds ratios for each factor derived from logistic regressions.

procedure, but a brief review by Adler *et al* (1996 89-92) suggest that it is a refinement of the syndromic approach which is certainly worth exploring further

There is an on-going debate concerning the efficacy of the syndromic approach which will not be reviewed here, the focus in this paper is on the feasibility of implementing this approach in terms of programmatic operating procedures rather than its effectiveness in correctly diagnosing and treating STIs. It is important for the future planning of these programs that attention be paid to this debate, however, as all four programs decided to use the syndromic approach because it is recommended by their national health programs. Each country's MOH and the donors supporting their programs have judged it to be the most appropriate strategy for their situation, i.e. limited availability and access to laboratory facilities and trained staff, and a perception that there is a relatively high prevalence for many STIs amongst family planning and antenatal clients. Its efficacy given a high proportion of asymptomatic cases, whether it is cost-effective, and whether there are ethical considerations given the potential for over-treating uninfected patients remain debatable issues, however

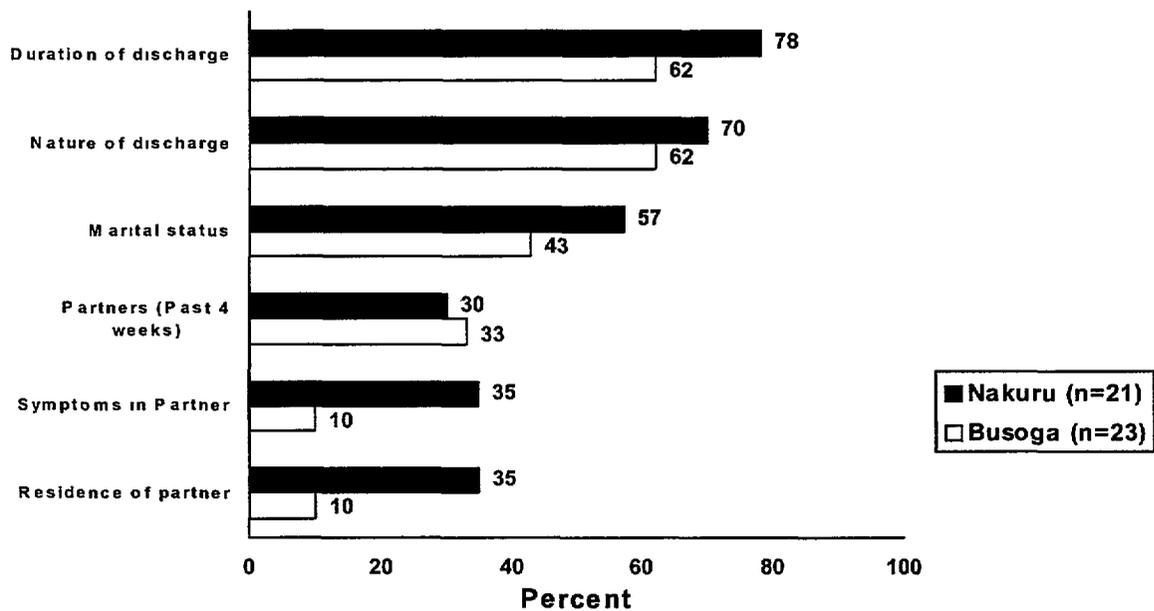
The case study methodology provides a 'snap-shot' of the way in which each program operates over a very limited period of time, and so only a small number of family planning clients were observed to be managed for a suspected STI, thus limiting the opportunity to assess the provider's competence in actual case management. In Busoga, 18 clients of the 66 consultations (27 percent) observed had symptoms and/or signs suggesting an STI. Using the syndromic approach the service providers classified 13 of them as having the "lower abdominal pain" syndrome and treated them accordingly, the remaining five cases were referred to another facility for further investigation.

In Nakuru it was possible to review the records of all clients diagnosed and treated for STIs using the syndromic approach at the five MCH/FP clinics. Over a one year period the lower abdominal pain syndrome was the most common diagnosis (44 percent) followed by vaginal discharge (34 percent) and genital ulcers (21 percent). It is discouraging to note, however, that for the twelve STI clients observed at the Nakuru STI clinic, the providers did not carry out a full risk assessment, obtain adequate history, carry out a general or pelvic examination, or follow the diagnostic algorithms correctly, despite the fact that during their

training, most emphasis had been placed on this aspect of STI management, and the algorithm flow charts were on the clinic walls

Because only a few family planning and antenatal clients were observed being detected and diagnosed for potential STIs, it was difficult to assess provider competence in managing a suspected STI case. Consequently, providers in Busoga and Nakuru were asked which additional information they would normally request from a woman presenting with visible symptoms of a vaginal discharge, the results are presented on Figure 4

**Figure 4: Percentage of clinic Staff mentioning additional information requested of women with a vaginal discharge**



These data suggest that many of the providers either do not know that they should be asking additional risk assessment questions to assist in diagnosis and treatment (which would suggest a weakness in their training), or if they do know about asking them they are not routinely asking clients presenting with STI symptoms. It is clear that they tend to focus more on the woman's immediate symptom than on her and her partner(s) behavior

Although all four programs expect their staff to use the syndromic approach to make a diagnosis and to determine treatment, the Nakuru program has easy access to a specialist STI laboratory and both Mkomani clinics have on-site, albeit limited, laboratories. Consequently, these laboratory facilities are used, for example, in the Nakuru program, clients with STI symptoms are first treated following the syndromic algorithms and clients who do not respond to the first treatment within seven days, or those clients with complicated symptomatology, are referred to the STI laboratory.

**c) *Treatment of STIs***

Each of the four programs expect their staff to follow the national STI treatment guidelines for each syndrome. In almost all cases, however, staff appear unable to follow these guidelines. Some staff could not describe to interviewers the drugs recommended to treat specific syndromes, suggesting that their training had been inadequate and/or that they needed to have some written reminders available in the clinic. Service provider guidelines were missing at nearly all the facilities visited.

The regimens recommended by the national STI control programs are changed from time to time due to changes in drug sensitivity, but these changes are not always reflected in the algorithms and service providers' manuals because revising and distributing the new algorithms takes time. For example, in Kenya the current service provider guidelines were developed more than three years ago and yet several changes have taken place in the management of STIs since. In Botswana, the guidelines were revised in 1994 but had not been distributed by June 1996.

For the Busoga and Mkomani programs, run by NGOs, insufficient funds and ineffective cost-recovery mechanisms mean that the program managers cannot afford to purchase the nationally recommended drugs and so purchase others instead, the Busoga program also suffers from frequent drug stock-outs. Consequently, staff either prescribe alternative drugs if they are available at the clinics or send their clients to a pharmacy to buy the drugs themselves. Neither strategy is completely acceptable as the former may result in the use of an ineffective treatment, and the latter in low-income women not obtaining treatment at all if pharmacy prices are perceived to be too expensive.

The Nakuru program, although public-sector, had special donor funding available for the purchase of recommended drugs at the time of the case study. While this made it possible for staff to follow the guidelines and not to charge clients, it also created a situation where these drugs were reserved explicitly for STI treatment. Consequently, although staff were working in an “integrated” delivery system, they became frustrated because these same drugs could be used to treat other problems, for which there is an acute shortage of drugs. The program has now started a cost-recovery mechanism using drugs donated by the UK Department for International Development (DfID) for STIs and other conditions.

The Botswana national program is probably fairly unique in sub-Saharan Africa in that the program is relatively well-financed and has a functioning commodity logistics system (supplying family planning and STI commodities together) which means that drug supply is not a problem.

In Kenya (as in many other countries in the region), the national Drug and Poisons Act does not allow nurses to prescribe certain categories of drugs, including antibiotics used for STI treatment. Thus despite their training in the syndromic approach, nurses at the Nakuru and Mkomani programs are not allowed to prescribe treatment drugs and have to refer their clients to a clinical officer or doctor who then relies on the nurses' diagnosis to prescribe medication. This policy clearly limits the potential for any STI management program being implemented in clinics where a nurse is the only provider available, and requires the client to undertake a second consultation to complete treatment. This and similar Acts in Kenya are currently being reviewed with the hope that the regulations will be changed.

***d) Contact tracing through partner notification***

If a woman has an infection which was transmitted sexually it is clearly essential to also treat her sexual partner(s), if not she is highly likely to become re-infected soon after treatment. A problem with syndromic management, however, is that the syndromes can include some infections which are not necessarily sexually transmitted (e.g. vulvovaginal

candidiasis and bacterial vaginosis) but result from endogenous overgrowths of normally present organisms (Elias, 1991) Care needs to be taken, therefore, in counseling women on communicating the fact that their partner may or may not be infected Most programs suggest that the partner be encouraged to attend the clinic so that the possibility of him having an STI can be confirmed or discarded

All four programs make efforts to trace the women's sexual contacts Given the limited resources available, however, home visits and referrals by clinic-based staff is clearly not a feasible option, although the Mkomani and Busoga programs did briefly try partner notification through the clinics' community outreach workers This quickly proved impossible for two reasons First, the women did not want anyone else to know about their treatment or to communicate with their partners about their infection, and so resented the idea that someone else would be contacting their partners Second, the outreach workers in both programs, but particularly in Busoga, are related to or friends with a significant proportion of the clinic clientele and so did not feel comfortable discussing these issues with community members They were particularly concerned about the possibility of notifying the partner before the woman had discussed the infection with him, or if the sexual partner was not the regular partner

Because of the difficulty in operationalizing a provider referral system<sup>17</sup>, the four programs expect staff to encourage the clients to notify their partner(s) themselves, and to encourage them to seek treatment Identification of the contact, however, is not made a prerequisite for receiving treatment in any of the programs -- all four programs rely on verbal notification, but asking women to notify their partners has proved to be very difficult Women are afraid to discuss such infections with their partners, despite the fact that for vast majority it was probably the male partner who was initially infected<sup>18</sup> The Nakuru and Busoga programs have tried giving written notes to the woman to pass on to her partner Although this has not worked well some married women have requested these notes as it avoids the

---

<sup>17</sup> Studies in Nigeria and Zimbabwe undertaken in the 1980s have shown differing levels of effectiveness for referrals made by providers The Nigeria study reported that home visits by clinic staff added very few extra partners attending for treatment beyond those notified directly by their partners, whereas the Zimbabwe study showed that home visits by community health workers could bring in more than half as many partners again (reported in Adler *et al* (1996 86))

<sup>18</sup> For example, a study of clients treated for STIs in the Nakuru clinics found that, among married women, over two-thirds said that they had been infected by their spouses (Moses *et al* , 1994)

need for them to discuss the issue directly with their partner. In both programs prescriptions and/or medications for the partner are sometimes given to the client without requesting that the partner comes to the clinic.

Clients in Busoga were asked what they felt about discussing STIs and sexual behavior with providers and with their partners. Overall, the levels of discomfort were uniformly high, ranging from 45 - 63 percent of clients feeling uncomfortable discussing either topic with anyone. Clients were slightly more likely to feel uncomfortable discussing sexual behavior than STIs, and to feel more uncomfortable discussing these issues with clinic staff than with their spouse.

Unfortunately, staff themselves do not routinely inform clients of the importance of partner notification. For example, of the 14 clients observed to be treated for STIs during the Nakuru case study (12 at the STI clinic and 2 antenatal clients), only three were told to notify their partners, and in Busoga, of the 13 antenatal clients observed to be treated for an STI, only three were told. Furthermore, very few clients were told of the importance of partner notification during general counseling on STIs -- 17 percent in Busoga and 13 percent in Botswana.

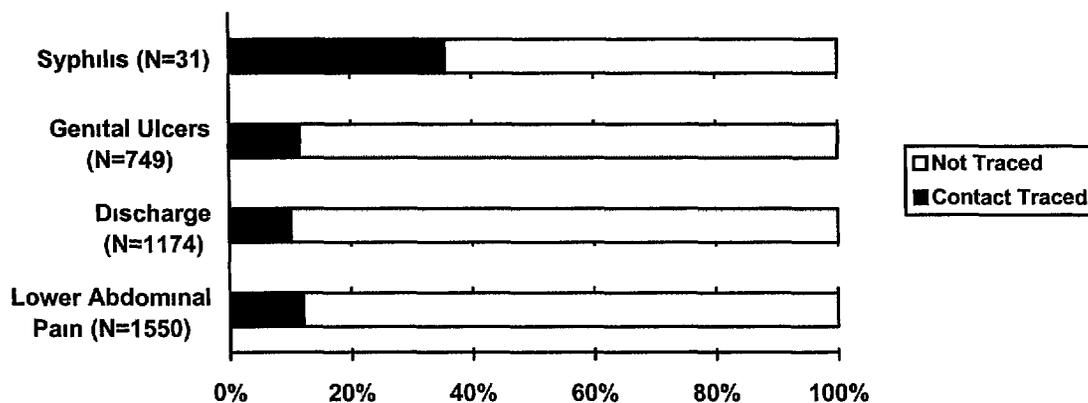
Empirical evidence of the effectiveness of contact tracing mechanisms is lacking because only the Nakuru program keeps any records. All clients treated for STIs are given a "contact slip" bearing their name to give to their partner, and if the contact returns to the clinic he is expected to present the slip which is then linked to the primary contact in the service statistics system. Although not perfect, as there is inevitably some under-reporting due to returning contacts not being recorded in the service statistics system, this approach has been found to be feasible and helpful to the program managers and staff. The rate of return of contacts is low, however, which was thought to be due to the client's confidentiality being compromised<sup>19</sup>.

---

<sup>19</sup> Following this case study the program has revised its contact slips to remove the client's name and instead use coded numbers to maintain anonymity for the client while still allowing the program to track contacts.

Figure 5 describes the overall contact rates for partners of female clients treated at the five Nakuru MCH/FP clinics. For women treated for lower abdominal pain, vaginal discharge or genital ulcers, approximately ten percent of their partners were notified and treated. This means that 90 percent of women treated are likely to remain at high risk of re-infection in the near future by their partners, thus effectively negating the treatment received. Among the 31 pregnant clients diagnosed and treated for syphilis the proportion was over one third, this infection may be taken more seriously because it also affects the baby.

**Figure 5 Proportion of partners notified by STI type**



How to improve on these low rates remains a major challenge to integrated programs because without partner treatment re-infection is almost inevitable. After reviewing the literature on partner notification strategies, Adler *et al* (1996: 87) suggest that "low rates [of partner notification] can be improved by 20-50 percent by addressing the following:

- i training staff to counsel patients about partners,
- ii introduction of contact cards or coupons,
- iii incorporation of information about the importance of partner referral and STI symptoms in health education materials and interventions,
- iv lowering the cost of treatment and improving access to services "

**e) Counseling and testing for HIV/AIDS**

Two STIs in particular have been singled out by all four programs for special attention: HIV and syphilis. All four programs serve populations where the prevalence of

HIV is high and the major mode of transmission among women attending MCH/FP clinics is heterosexual intercourse, consequently, HIV education, counseling and referral are seen as essential components of any STI management program being implemented within MCH/FP clinics

Almost all providers indicated that they have received training in general HIV/AIDS counseling, usually through in-service refresher training as one component of the overall 'integration' intervention. So, in theory, they are able to inform and educate clients about HIV transmission and symptoms. However, issues related to HIV/AIDS were infrequently discussed with clients observed receiving MCH/FP services, and there was, moreover, a wide range across the programs - from three percent of clients in Nakuru, through one quarter in Busoga to over half the clients in Botswana.

Managers for all four programs feel that HIV testing (and its associated counseling) is difficult and sensitive, and is beyond the capacity of their standard MCH/FP clinics and staff. Consequently, all four programs have made arrangements for clients who exhibit signs and symptoms of HIV/AIDS, or who specifically request a test, to be referred elsewhere for testing and its associated counseling. Thus the Mkomani clinics have established a referral arrangement with the Provincial hospital in Mombasa, the Nakuru clinics refer their clients to the Provincial hospital in Nakuru town, and the Busoga program relies on the mobile clinics of another NGO, the AIDS Information Center (AIC). In Botswana, clients attending MCH/FP clinics have their blood specimens taken at the clinic and sent to the nearest hospital for testing.

This referral process has problems, however. For example, in the Busoga program staff report that after referral to AIC for testing, many clients never come back to seek further support and assistance. In Botswana, results of the HIV test take on average 18 days to be received back at the referring center, thus delaying counseling.

#### *f) Screening Antenatal clients for syphilis*

Virtually all STIs are known to have an adverse effect on pregnancy outcomes

(Wasserheit & Holmes, 1992, Schulz *et al*, 1992, Elias, 1991 10) Of the major STIs, however, the only one for which screening women attending for an antenatal checkup is strongly recommended is maternal syphilis<sup>20</sup> Studies have shown that amongst pregnant women with early syphilis, 20-25 percent will lose the fetus, 15-50 percent will deliver low birth weight or premature babies, and 40-70 percent will pass on a congenital or perinatal infection (Wasserheit and Holmes, 1992) Infection rates for syphilis amongst antenatal clients in sub-Saharan Africa generally are in the range of 4-15 percent (Schulz *et al*, 1992)

These factors have convinced policymakers in several African countries, including Kenya, Uganda and Botswana, to recommend that syphilis testing be provided for **all** antenatal women attending MCH/FP clinics For these reasons, all four programs include antenatal syphilis testing as one component of their integrated approach The case studies reveal many difficulties in trying to implement this recommendation, however

- The **Botswana MOH** uses the VDRL test to screen for syphilis Although syphilis screening is available at 95% of the hospitals it is only available at fewer than 10% of lower level facilities, which is where most pregnant women attend for antenatal care Blood samples have to be sent from these clinics to a referral laboratory, a service which takes an average of five days However, the MCH/FP program management estimates that 90 percent of antenatal clients are tested, although the proportions receiving results and treatment are not known
- In the **Nakuru program**, the donor agency made available the necessary equipment and supplies to screen for syphilis using the simpler, but less specific RPR test at the reference laboratory in the town In 1995, a little over half of approximately 9,000 new antenatal clients were screened Blood specimens are collected from the women at the clinic attended and sent to the reference laboratory for testing Of the 4,577 women tested, 0.7 percent (31 women) tested positive, however, only 18 of these 31 women and 11 of their partners actually received treatment<sup>21</sup>

---

<sup>20</sup> For gonorrhoea and chlamydia, the current opinion is that prophylaxis in the newborn is a more cost-effective intervention than detection and treatment in the mother during pregnancy although Schulz *et al* (1992 171) suggest that control of gonorrhoea during pregnancy may have a substantial impact on prematurity and perinatal mortality

<sup>21</sup> A single dose therapy with benzathine penicillin

- For the **Mkomani program**, antenatal clients are routinely referred from the consultation room to the on-site laboratory at each clinic for a VDRL test. In 1994, of the 1,500 new antenatal clients seen, only 27 percent had themselves tested. Of these 398 women tested, 4.5 percent (18 women) were found to be positive. The program's cost recovery scheme means that women are charged for this test which is felt by the staff to be the main reason why three-quarters of clients decided not have the test. A 'willingness to pay' study is clearly needed to validate whether this is indeed the case or whether there are other factors inhibiting women from taking the test.
- None of the clinics in the **Busoga program** have syphilis testing facilities and so providers are expected to refer clients to the nearest Government facilities. Only a handful of providers interviewed said that they did this and none of the antenatal clients observed during the case study were referred. The program does not keep statistics on syphilis screening.

The reasons why this is an ineffective service are fairly clear. For the Botswana and Busoga programs, an extra visit to the clinic is required to obtain the result at a later date, indeed, for the Busoga program, the blood sample and result are undertaken at another clinic, thus requiring two extra visits to a different clinic. In the Nakuru program the referral laboratory is in close proximity to the clinics, but clients cannot get their results during the same clinic visit because it still takes a few days and so they have to return later<sup>22</sup>. This clearly deters women from both taking the test and returning for the results, as evidenced by the 48 percent of clients who did not take the test, and the 42 percent of positive cases detected who did not return to find out the result or to be treated. For the Mkomani clinics, the test is done on-site but the results are not available the same day.

---

<sup>22</sup> The RPR test itself is fairly simple, however, and the results can, in theory, be made available as soon as five minutes after the specimen has been collected. If the sample has to be sent to an off-site laboratory, however, even if it is close by there will be a need for a return visit by the woman or at least a delay in getting the result to her. If the woman is returning for a second antenatal visit within a short time period then the result (and treatment if necessary) could be given at that time.

## 4.2) Prevention of new infections

All four programs would like to prevent new and re-infections, and to improve the health-seeking behavior of those clients who feel they may be at risk of or actually are infected, but these appear to be their weakest components. This is not surprising as both require communication and behavioral change interventions which are somewhat difficult for clinic-based programs to implement. All four programs rely on limited clinic-based and community-based IEC activities with some promotion of condom use as their preventive strategies.

### a) *Information and education in the clinics*

All programs have sought to inform and educate MCH/FP clients attending their clinics about STIs and HIV/AIDS. Indeed, all of the clinics visited (except one in the Busoga program) provide HIV/AIDS information<sup>23</sup>. The IEC activities include a combination of including the topics during group health talks, having print materials available, and discussing them with clients during individual consultations. The extent to which these IEC activities are actually carried out seems to vary between the programs, however.

*Group health talks* for clients before services commence in the morning are mandatory in all four programs but appear not to be held regularly, and when they are held the topics of HIV/AIDS and STIs are rarely included. The Busoga program performed best in this regard, where health talks were held in 10 of the 17 clinics visited and all ten talks included discussions of family planning, STIs and HIV/AIDS. Group health talks are intended to provide basic health education for women in addition to the service for which they are attending the clinic, and are expected to be interactive so that questions can be asked to clarify certain topics. As was observed in these case studies (and in numerous Situation Analysis studies in other African countries), however, the group health talk is a neglected IEC

---

<sup>23</sup> The clinics appear to be reticent to advertise that they offer STI/HIV/AIDS services, however. None of the Mkomani or Nakuru clinics had signs or billboards announcing STI/HIV/AIDS services, and these were found in only 20 percent and 29 percent of the Botswana and Busoga clinics respectively.

intervention which would benefit from further attention and evaluation<sup>24</sup>

Traditionally, MCH/FP clinics have tended to rely on *printed materials* for communicating health messages while women wait for their consultation and during the consultation itself. Posters, flipcharts and brochures were frequently not present in the clinics visited, and where they were present were often not informative. Such materials need to be tailored to the literacy levels and culture of the clients, which can be difficult when these same materials are expected to be used in both urban and rural settings and sometimes in different countries. The effectiveness of using print materials in communicating reproductive health messages is not well understood<sup>25</sup> and this issue needs further testing in relation to STIs/HIV/AIDS before recommendations can be made as to whether more effort needs to be made in promoting their development.

A key opportunity to provide information on STI and HIV/AIDS prevention, diagnosis and treatment is during the *individual consultations* with family planning and antenatal clients. All four programs explicitly encourage their providers to discuss STIs and HIV/AIDS with their family planning clients. Data from the case studies are mixed but somewhat encouraging. For all MCH/FP consultations observed, 53 percent of the clients in the Botswana clinics and 62 percent in the Busoga clinics received some information on STIs and/or HIV/AIDS, but only four of the 60 clients observed in the Nakuru clinics (i.e. seven percent) received this information.

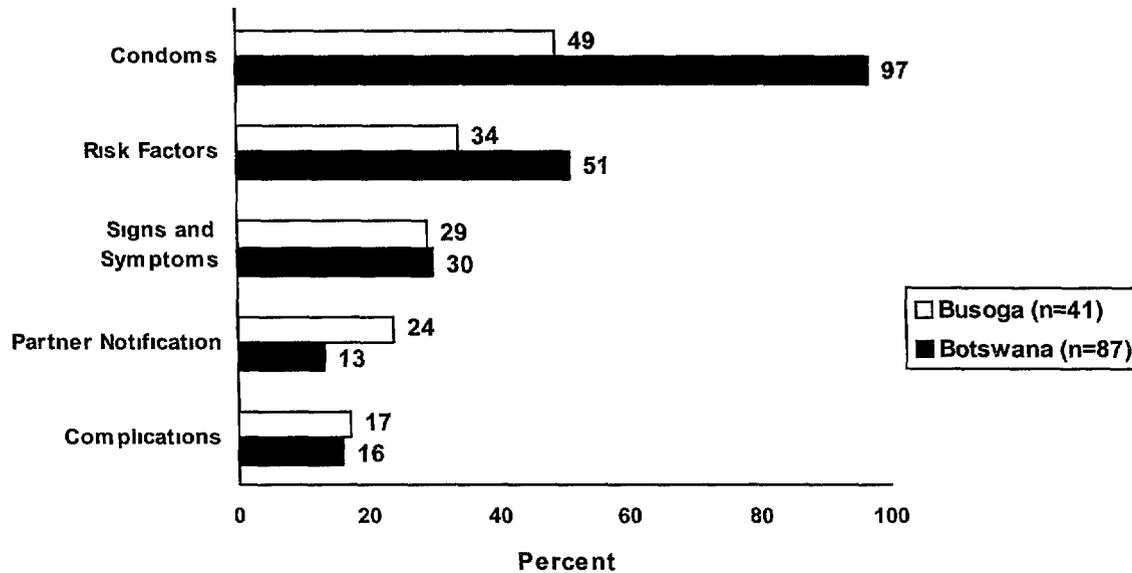
Figure 6 describes the main topics covered during the Botswana and Busoga observations, showing that condom use and risk factors tend to be the issues most frequently discussed. As highlighted earlier, more attention needs to be placed on describing potential signs and symptoms and stressing the importance of partner notification if a woman is infected.

---

<sup>24</sup> For example, staff in the Busoga program have suggested that a more structured approach to giving group health talks would be more effective, perhaps through the provision of a set of guidelines and materials to help staff prepare for and give the talks.

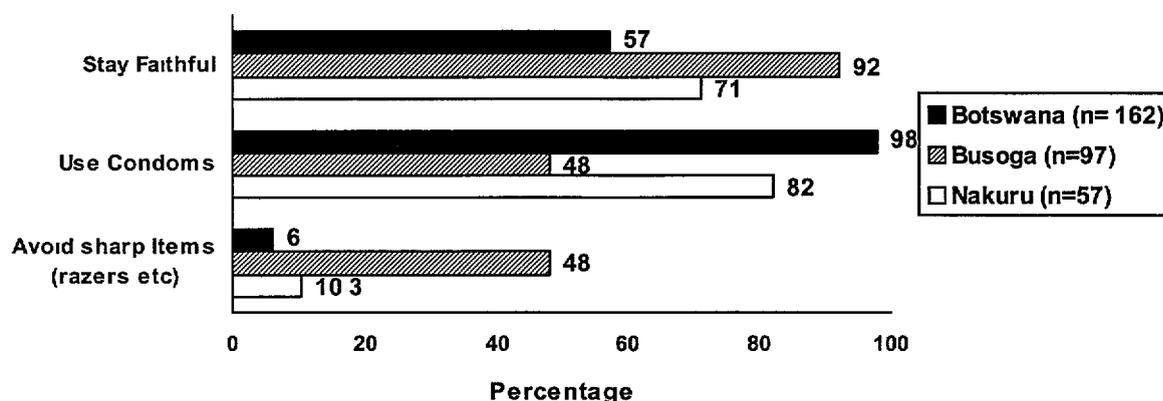
<sup>25</sup> A recent study of IEC materials in Kenya suggests that posters in clinics can reach a large proportion of the population, probably because of frequent visits to clinics (Kim *et al.*, 1996).

**Figure 6: STI/HIV-related topics discussed with MCH/FP clients**



The emphasis placed by providers in different programs on the use of the condom appears to be reflected somewhat in their clients' perceptions of how best to prevent infection, as shown in Figure 7. While clients in Busoga clearly place more emphasis on reducing the number of sexual partners by practising fidelity, the use of condoms appears to be the preferred strategy in Botswana, in Nakuru, both approaches are seen to be important. These differences may also reflect larger socio-cultural differences in beliefs about sexual behavior between the three populations and about the efficacy of condoms.

**Figure 7: Clients' perceptions of ways to reduce likelihood of STI/HIV**



Rather surprisingly, the provision of information on infection prevention to MCH/FP clients who have been detected, diagnosed and treated as having an STI is weak. For example, of the 13 antenatal clients in the Busoga program treated for an STI, only six were told of ways to protect themselves, with four being told about condoms, and only seven were told to notify their partner. Similarly, in Nakuru of the 12 clients observed to be treated for STIs, only two were informed about condoms and three about partner notification. Clearly, this is a weakness which could and should be corrected.

***b) IEC activities in the communities***

The Botswana national MOH program is primarily clinic-based, but at the community level there are “health posts” which are staffed by Family Welfare Educators (FWEs) whose primary role is to educate families and communities about health issues and to motivate them to use health services, in rural areas they are seen as the first point of contact with the health care system. Although almost all of the 163 FWEs interviewed had been trained in child welfare and family planning and about one half in antenatal care, only one third indicated that they had received training in STI management and less than 10 percent had been trained in HIV/AIDS. Clearly there is a need to further strengthen the ability of the FWEs to provide information on infection prevention and to act as a referral for treatment of suspected cases if the integrated approach is to characterize the whole health care system.

The other three programs have established community-level outreach IEC activities in their clinic catchment areas which focus on family planning, STIs and HIV/AIDS. The Mkomani and Busoga programs already had strong community-based IEC activities organized around community workers who promoted family planning and provided non-prescription contraceptives. These take the form of home visits, group talks, school visits and addresses at other public meetings by the community-based outreach workers and occasionally by the clinic staff<sup>26</sup>. With the introduction of each program's "integration" initiative, concerted efforts have been made to broaden the range of messages communicated through these channels so that STIs and HIV/AIDS are explicitly included.

The Nakuru program operates in an area with a large population of commercial sex workers (CSWs) for whom fertility regulation and infection prevention are seen as equally important concerns. The program has recruited peer educators from amongst the CSWs and trained them to provide information on STIs, HIV/AIDS and MCH/FP services to other CSWs and to assist CSWs wishing to develop alternative means of generating income. The program also has a team of counselors who visit schools and industrial workplaces to provide information and counseling, and non-prescription contraceptives including condoms.

Through their community-based approaches, all three programs have been able to reach a wide range of audiences, including the high risk groups of youth, CSWs and men. Moreover, the community workers in all three programs report being better received now by their communities due to the broadening of their activities beyond family planning and the perception that they are responding to the communities' health needs in a more comprehensive manner.

---

<sup>26</sup> The Busoga program has also formed 20 village workers into what they refer to as the "IEC group" (and have renamed themselves "communication agents"), who are responsible for developing culturally appropriate plays and songs with messages on STIs, HIV/AIDS and MCH/FP themes. These plays and songs are performed to audiences within the communities during various communal events.

## 5) **Conclusions: a prototype model for integration?**

Although all four models were developed independently, operate within different organizational and socio-cultural environments, and serve different populations, a number of commonalities are apparent in the way in which the services have been organized. The box on the next page summarizes what appears to be a fairly standard model emerging from these case studies, although no one program was found to have all of these components. Five points need to be highlighted.

**First**, the activities described in the model are feasible and applicable for MCH/FP clinics which do not have on-site facilities that would permit even basic STI testing. As low-cost STI tests emerge that could be used in such situations, the approach to case finding among asymptomatic women would also change.

**Second**, the case finding procedures described are applied primarily to new family planning clients and, to a lesser extent, to first visit antenatal clients. History taking and a clinical examination are integral parts of these services and so the additional case finding activities can be added fairly easily. Whether case finding through risk assessment, history taking and clinical examination can, and should, be extended to revisit family planning clients, later-term antenatal clients, and clients attending for infant or child welfare services needs further consideration given the implications for additional resources and time spent with the client, and the uncertainty of its effectiveness.

**Third**, most attention has been paid by program managers to integrating the finding and treatment of STI cases among asymptomatic women attending their clinics for MCH/FP services. Integrating communication and behavior change activities that encourage infection prevention into existing MCH/FP IEC strategies are clearly essential components of any model for providing integrated services and need to be strengthened.

**Fourth**, although not a major focus of the case studies, anecdotal evidence suggests that this integrated approach is acceptable to both providers and clients because additional services are provided in a way that reduces overall time for the client and jointly providing the services does not unduly burden the provider<sup>27</sup> Empirical evidence of the actual time and costs involved in providing integrated compared with vertical services is needed within the framework of an overall cost analysis Moreover, because STI/HIV services are more sensitive than MCH/FP services and their users are usually stigmatized, it is clear that particular attention needs to be paid to the way they are presented within the clinic environment

**Fifthly**, the cost of providing these services was not included in these case studies and is the subject of a complementary study being implemented by REDSO/ESA Cost analyses have been undertaken of the Botswana, Mkomani and Busoga programs and are reported in a forthcoming monograph to be published by REDSO/ESA

In conclusion, it is clear that although it is *feasible* to implement most of the components of a model of integrated services in a variety of programmatic and socio-cultural settings, none of the programs appear to be functioning effectively at present Some reasons for this are specific to each program, indeed, following the case studies a number of programmatic changes have been made by the managers<sup>28</sup> based on these observations Moreover, the effectiveness of syndromic management, which is at the heart of this model, needs to be improved for the overall approach to be more successful The following section makes some general recommendations as to how such a model could best be implemented in a MCH/FP program, and suggestions are made for further research on those issues which the case studies could not address

---

<sup>27</sup> Staff in the Busoga program felt that there had actually been an increase in the use of MCH/FP services because they were now being provided in a broader reproductive health context which made them more attractive

<sup>28</sup> The reports for the Mkomani (Twahir *et al* , 1996), Busoga (Mukaire *et al* , 1997) and Nakuru (Kariba *et al* , 1997) case studies include descriptions of the problems identified and the remedial actions by the program managers

---

## **A prototype model for integrating STI/HIV Services into MCH/FP Programs**

- Applicable for MCH/FP clinics with no or limited access to laboratory facilities
- Integrated service offered primarily to new family planning and antenatal clients
- Package of services offered at single visit

Four components of STI management added to FP/ANC services

- 1) Case finding and treatment of asymptomatic women or women not recognizing existing symptoms, through
    - ▶ risk assessment by asking questions on behavioral factors
    - ▶ clinical history taking
    - ▶ general clinical examination
    - ▶ pelvic exam if possible (full preferably)
    - ▶ if signs/symptoms identified, categorize into general syndrome
    - ▶ provide appropriate curative treatment, on site, preferably by same person doing diagnosis, and at same time as diagnosis
    - ▶ encourage partner notification by client for screening
  - 2) HIV/AIDS management through
    - ▶ HIV testing and counseling through referral to nearest specialist site for clients with signs and symptoms, or for those explicitly requesting testing
    - ▶ IEC on prevention of HIV transmission and signs/symptoms of HIV infection to all clients
  - 3) Finding and treatment of maternal syphilis through
    - ▶ screening all antenatal clients on first visit for syphilis infection through referral for test and/or result
    - ▶ encourage contact tracing through partner notification by client
  - 4) Information and education to prevent new infections and to improving health-seeking behavior if infected through
    - ▶ raising awareness of signs and symptoms of possible infection
    - ▶ education on safer sexual behavior and practices
    - ▶ promotion of condom use
    - ▶ group health talks
    - ▶ print materials available in waiting rooms, during individual consultations and to be given to clients
    - ▶ individual consultations with MCH/FP clients
    - ▶ group and individual talks within the clinic catchment areas through community health workers including STI/HIV with MCH/FP messages
    - ▶ advertising availability of services
-

## 7) Recommendations for program strengthening and suggestions for further research

### ■ Accurate data are not generally available to inform MCH/FP program managers which diseases are most common among their clientele, and so managers do not know what level of STI service utilization rates to expect or the requirements for ordering drugs

- ➔ Wherever possible, population-based surveys of reproductive morbidity, and especially STI prevalence, should be undertaken by program managers prior to developing integrated programs. Ideally these would use inexpensive bio-assay tests<sup>29</sup>, but well-designed questionnaire surveys could also be used subject to further validation

*Research*      *feasibility of population-based surveys of STI/HIV prevalence including validation of questionnaire surveys on reproductive morbidity and improvement of simple bio-assay tests*

*Research*      *utility of facility-based measurement given selection biases of population attending clinics*

### ■ Clients' awareness of symptoms associated with STIs, their ability to identify and describe them, and providers' ability to understand clients' descriptions of symptoms are poor and need to be improved for the syndromic approach to work effectively

- ➔ Increase clients' awareness of symptoms through IEC activities within clinics and, where possible, through community-based programs
- ➔ Train staff in local terminology and concepts used to describe potential signs and symptoms

*Research:*      *document perceptions, definitions and descriptions of reproductive morbidity in catchment area populations*

*Research*      *test IEC interventions in clinics and through outreach programs to raise awareness of symptoms and signs among general population*

---

<sup>29</sup> The development of such tests is a priority concern for those involved with reproductive health and their application through population surveys is equally important. The DHS pilot tested an approach in Ethiopia with promising results (Macro International, 1997). It should be noted that although the specimen collection is quite simple, and appears to be acceptable, transporting the specimens for testing remains a substantial logistical, and expensive, task.

■ **Risk assessment and clinical history taking are essential components of finding potential STI cases among mainly asymptomatic MCH/FP clients but are not performed consistently or according to guidelines**

- ➔ Train clinic staff in discussing sexual behavior with clients and in being more aware of clients' self-assessment of their risk of being infected
- ➔ Develop service delivery guidelines that take into account the potential difficulties faced by staff in their implementation
- ➔ Provide clear written guidelines and checklists for clinic staff to follow that specify exactly which questions to ask and how to interpret the answers
- ➔ Ensure guidelines are reviewed and updated regularly, preferably based on observations of staff performance and validation studies
- ➔ Redesign MCH/FP client record cards so that risk assessment and STI clinical history and signs can be recorded
- ➔ Improve levels of privacy available during consultations so that sexual behavior and STIs can be more easily discussed

*Research*      *comparison of time taken to undertake "normal" MCH/FP client consultation with one that includes comprehensive STI risk assessment and clinical history taking*

*Research*      *the acceptability of an "integrated" consultation from the provider, client and clinic manager's perspectives*

*Research*      *clients' and providers' attitudes towards discussing sexual and STI issues in clinic environment*

*Research*      *test and validate different factors and weights to include when using scoring within a risk assessment*

■ **A thorough general clinical examination and a pelvic examination, essential for detecting signs and symptoms associated with STIs, are not always undertaken**

- Reinforce the need for staff to undertake a thorough general physical exam to assist in detecting non-genital signs
- Ensure that client record cards are able to record all information needed for a general physical examination
- Ensure that all MCH/FP clinics have the basic equipment and supplies needed for an internal pelvic examination (e.g. speculum, gloves, adequate light) and that there is sufficient privacy for the examination
- Train staff in providing appropriate psychological support to reduce client nervousness
- If these conditions are met, reinforce the requirement that an internal pelvic examination be undertaken for all new family planning clients, annually for all returning family planning clients, and for all MCH/FP clients with symptoms and signs associated with STIs and/or assessed to be at risk through the risk assessment / clinical history taking

■ **In the absence of laboratory facilities, the syndromic approach has been adopted for diagnosing and treating a person detected to have signs and symptoms of an STI, but it has not always been correctly applied**

- Program managers should constantly monitor new developments in syndromic management procedures and update their guidelines regularly
- Whenever guidelines are updated the new information should be passed on immediately to staff through appropriate means (e.g. circulars, in-house refresher training)
- To increase efficiency, the person undertaking the finding and diagnosis of potential STI cases should also be able to prescribe and provide treatment during the same visit

*Research      test and validate the syndromic approach amongst MCH/FP populations and in areas with different STI prevalence levels*

*Research      test the feasibility and effectiveness of adding risk scoring to the syndromic approach*

- **Most MCH/FP clinics refer less straightforward cases to facilities with laboratories for further testing, but current referral arrangements are time-consuming and frequently the client is lost before diagnosis and/or treatment are complete.**

- ➔ Existing referral arrangements need to be examined closely to look for ways to improve their effectiveness
- ➔ As simpler screening tests become available programs should develop the capacity to use them at an increasing number of secondary and even primary level facilities

*Research      test the feasibility and effectiveness of introducing simple STI testing facilities (e.g. microscopy equipment and supplies, staff training, RPR tests) at MCH/FP clinics*

- **The syndromic approach is intended to simplify treatment of STIs by requiring a small range of drugs that can treat several types of infection, but the supply of these drugs at clinics and their purchase by clients are major problems in all but the strongest programs**

- ➔ Improve staff understanding of the different treatments available, through training and written guidelines, and update these regularly to reflect changes in drug sensitivity
- ➔ Strengthen existing drug supply mechanisms and forecasting / ordering procedures for MCH/FP clinics to include drugs that can be used for treating STI syndromes and other illnesses, and to ensure that essential drugs are routinely available at clinics
- ➔ Ensure that sufficient funds are available to program managers, through government or donor sources or cost-recovery mechanisms, to maintain a continuous supply of drugs to the clinics
- ➔ Wherever possible, ensure that the client receives / purchases the drugs at the same clinic to ensure correct treatment provided

*Research      Ascertain the willingness and ability of clients to pay for STI services when provided during an MCH/FP consultation*

*Research      Test the elasticity of demand associated with varying drug prices*

*Research      Test alternative cost-recovery mechanisms*

■ **Condom promotion should be an integral component of all information exchanges with MCH/FP clients, but is undertaken to differing extents by each program**

- ➔ Use of the condom for protection from STIs should be promoted more strongly, either on its own or possibly in conjunction with another contraceptive method (i.e. dual use)

*Research      test the feasibility and effectiveness of different messages and supply of condoms on use and continuity of use*

*Research      assess the acceptability and effectiveness of promoting dual contraception*

■ **Partner notification is essential to prevent re-infection in the woman herself, but the procedures followed (asking the woman to notify her partner verbally and for him to visit the clinic) were found to be universally weak**

- ➔ Staff should make sure that the importance of partner notification is always included in the counseling given to all clients treated for an STI and whenever discussing STIs in general

- ➔ Programs should look for ways to make partner notification sensitive to the woman's personal and social situation, and especially to the possibility that the diagnosis may not be accurate and the infection may not be sexually transmitted

*Research      Test alternative ways of increasing partner visits for screening*

- **For MCH/FP clients suspected to have HIV, or who have asked for a test, all programs refer elsewhere for testing and counseling because testing facilities are not widely available and counseling is felt to be a specialized activity which MCH/FP staff are not able to undertake**

- ➔ Programs should review the acceptability and effectiveness of current procedures for referring clients for HIV testing and counseling to determine if they can be strengthened and whether the counseling can be decentralized to the MCH/FP clinic

*Research As rapid and simple HIV tests become more available, explore ways of introducing HIV testing and counseling into MCH/FP clinics*

- **All programs have mandatory syphilis screening for antenatal clients but because this normally requires the client to return at a later date for the result and requires payment, few women have the test and even fewer return for the result**

- ➔ Current procedures for collecting and testing specimens, giving the result to the client, and ensuring treatment for infected clients *and* their partners must be examined closely to improve their effectiveness if they are to continue
- ➔ The feasibility and cost-effectiveness of introducing antenatal screening for other STIs (especially gonorrhea) should be considered given their association with adverse pregnancy outcomes

*Research Test alternative strategies for strengthening the effectiveness of detecting and treating antenatal syphilis infections*

*Research Test the cost and effectiveness of increasing the availability and use of low-cost, simple syphilis screening tests*

*Research Test the cost-effectiveness of introducing screening of antenatal clients for other STIs, especially gonorrhea*

■ **All MCH/FP programs mandate that group health talks should be held at their clinics daily, but these are infrequently held and information on STIs and HIV/AIDS is only given occasionally**

- ➔ If health talks are to continue then they need to be strengthened through ensuring that they are always held, planning which issues are to be covered, training staff in effective communication techniques and providing guidelines and materials, especially for topics such as the symptoms and signs of STIs

*Research Effectiveness of group talks and print materials on communicating information about STIs to MCH/FP clients*

■ **The availability of STI/HIV/AIDS services is not well advertised at MCH/FP clinics, preventing clients from pro-actively seeking counseling or screening, or initiating discussion of STIs during a consultation**

- ➔ Clinic managers must ensure that clients are fully aware of all services available at the clinic, including when and where they can be obtained, through signs and posters inside and outside the clinic. Moreover, this advertising should stress that the service is available during regular MCH/FP consultations and so does not require a separate visit, and that strict confidentiality will be maintained

**In conclusion**, this analysis suggests that integration of services is occurring primarily through finding and treating potential STI cases among MCH/FP clinic clients. Some IEC activities are being integrated to encourage preventive behavior, but much remains to be done to strengthen this component. There appear to be two broad priority issues which operations research should be used to address next.

The case studies show that although it is *feasible* to find and treat STI cases, program managers must pay close attention to many issues, particularly quality staff training, clear procedural guidelines, regular drug supplies, effective and sensitive partner notification, and continuous IEC in the clinic catchment areas. What is emerging clearly from this and other analyses, however, are the dual concerns with the *effectiveness* of the approach in correctly finding, diagnosing and treating clients with STIs, and the *cost-effectiveness* of this approach compared with others. Its effectiveness is being questioned because recent studies are showing that the validity of syndromic management, even with risk scoring, may be too low.

Although many policymakers and donors in the region have endorsed the use of syndromic management in the context of MCH/FP clients, this has been based more on its utility in the absence of accessible and low-cost laboratory tests than on demonstrated effectiveness. The key priority issue to be addressed through operations research is, therefore, establishing the validity of the syndromic approach (including with and without risk scoring) in MCH/FP clinic settings. If proved to be acceptably effective, studies should then measure the marginal cost of adding this service, and comparing its cost-effectiveness with alternative strategies for detecting and treating STIs among MCH/FP clients.

The second priority for operations research is to evaluate the impact of this approach on reducing the transmission and prevalence of STIs, including HIV, in the general population. This is an important issue for policymakers and donors as it is unknown whether this essentially *curative* approach would have an impact on STI prevalence. Moreover, whether it would be more effective than a *behavior change* approach which focused on providing information and education about prevention of infection is also not known. Indeed, little is known about the impact on STI prevalence of preventive strategies integrated with MCH/FP programs. These types of studies would be resource-intensive, however, as they require longitudinal surveys with population-based bio-assay measures of STI/HIV prevalence.

## References

Adler, M , S Foster, J Richens and H Slavin (1996) *Sexual Health and Care Sexually Transmitted Infections, Guidelines for Prevention and Treatment*, Overseas Development Administration, London, UK

Baakile, B , L Maribe, B N Maggwa and R Miller (1996) *A Situation Analysis of the Maternal and Child Health / Family Planning (MCH/FP) Program in Botswana*, Ministry of Health, Botswana and Africa OR/TA Project II, The Population Council, Nairobi, Kenya

Brunham, R and J Embree (1992) "Sexually Transmitted Diseases Current and future dimensions of the problem in the Third World", pp35-58 in German, A , K Holmes, P Piot and J Wasserheit (eds), *Reproductive Tract Infections Global Impact and Priorities for Women's Reproductive Health* Plenum Press, New York, NY, USA

Bullut, A , *et al* (1995) "In search of truth Comparing alternative sources of information on reproductive tract infection", *Reproductive Health Matters*, no 6 31-39

Carael, M *et al* (1990) "Research on sexual behavior that transmits HIV the GPA/WHO collaborative survey - preliminary findings", in Dyson, T (ed) *Sexual Behaviour and Networking Anthropological and Socio-Cultural Studies in the Transmission of HIV*, Editions Derovaux-Ordina, Liege, Belgium

Dallabetta, G and S Hassig (1995) *Indicators for Reproductive Health Program Evaluation* Final Report of the EVALUATION Project subcommittee on STD/HIV, Carolina Population Center, Chapel Hill, North Carolina, USA

Daly, C , B N Maggwa, J Mati *et al* (1994) "Risk factors for gonorrhoea, syphilis and trichomoniasis infection among women attending family planning clinics in Nairobi, Kenya", *Genitourinary Medicine*, 70 155-161

Elias, C (1991) *Sexually Transmitted Diseases and the Reproductive Health of Women in Developing Countries* Programs Division Working Paper #5, The Population Council, New York, NY, USA

German, A , K Holmes, P Piot and J Wasserheit (eds) (1992) *Reproductive Tract Infections Global Impact and Priorities for Women's Reproductive Health* Plenum Press, New York, NY, USA

Gertig, D , S Kapiga, J Shao and D Hunter (1997) "Risk factors for sexually transmitted diseases among women attending family planning clinics in Dar-es-Salaam, Tanzania", *Genitourinary Medicine*, 70 39-43

Gray, R and M Wawer (1996) "Clinical / laboratory methods for the diagnosis of reproductive morbidity in population-based studies", *Seminar on Innovative Approaches to the Assessment of Reproductive Health*, IUSSP Committee on Reproductive Health and Population Institute, University of the Philippines, IUSSP, Liege, Belgium

Grosskurth, H , F Moshia, J Todd *et al* (1995) "Impact of improved treatment of sexually transmitted diseases on HIV infection in rural Tanzania randomised controlled trial", *The Lancet*, 346 530-536

Heise, L and C Elias (1995) "Transforming AIDS prevention to meet women's needs A focus on developing countries", *Social Science and Medicine*, 40,7 931-943

- Hunter, D , B N Maggwa, J Mati *et al* (1994) "Sexual behavior, sexually transmitted diseases, male circumcision and risk of HIV infection among women in Nairobi, Kenya", *AIDS*, 8 93-99
- Kapiga, S , J Shao, G Lwihula and D Hunter (1994) "Risk factors for HIV among women in Dar-es-Salaam, Tanzania", *Journal of Acquired Immune Deficiency Syndromes*, 7 301-309
- Kapiga, S , B Vuylsteke, M Laga *et al* (1997) "Evaluation of STD diagnostic strategies among family planning clients in Dar es Salaam, Tanzania", Paper presented at the Annual Meeting of the Population Association of America, Washington D C , March 27-29
- Kariba, J , B Kariuki and B N Maggwa (1997) *Integration of STI and HIV/AIDS with MCH-FP Services A case study of the Nakuru Municipal Council's Project on Strengthening STD/AIDS Control*, Nakuru Municipal Council and Africa OR/TA Project II, The Population Council, Nairobi, Kenya
- Kim, Y M , C Lettenmaier, D Odallo *et al* (1996) "*Haki Yako A Client-Provider Information Education and Communication Project in Kenya*", IEC Field Report Number 8, Johns Hopkins Center for Communication Programs, Baltimore, MD, USA
- Laga, M (1992) "Human Immunodeficiency Virus infection prevention The need for complementary Sexually Transmitted Disease Control", pp131-144 in Germain, A , K Holmes, P Piot and J Wasserheit (eds), *Reproductive Tract Infections Global Impact and Priorities for Women's Reproductive Health* Plenum Press, New York, NY, USA
- Langer, A (1996) "Impact assessment what criteria do we use to demonstrate the importance of RTIs to policymakers?", pp39-45 in Grant, J and D Measham (eds) *Reproductive Tract Infection Lessons learned from the Field Where do we go from here?*, The Robert H Ebert Program on Critical issues in Reproductive Health and Population, The Population Council, New York, New York, USA
- Macro International (1997) Ethiopian Reproductive Health Survey STD Pilot Study, *Unpublished Report*, Macro International, Calverton, Maryland, USA
- Maribe, L , B N Maggwa and I Askew (1997) *A Rapid Assessment Approach to Evaluating the Quality of Care in an Integrated Program The Experience of Botswana*, Ministry of Health, Botswana and the Africa OR/TA Project II, The Population Council, Nairobi, Kenya (forthcoming)
- Mason, K (1994) "HIV transmission and the balance of power between women and men a global view", *Health Transition Review*, Supplement to vol 4, 217-240
- Mayhew, S (1996) "Integrating MCH/FP and STD/HIV services current debates and future directions", *Health Policy and Planning*, 11,4 339-353
- Mertens, T, M Carael, P Sato *et al* (1994) "Prevention indicators for evaluating National AIDS Control Programs", *AIDS*, 8 1359-1369
- Miller, R , K Stein, K Miller *et al* (1996) "Measuring reproductive health care after Cairo Findings from four Situation Analysis Studies in Africa", *African Journal of Fertility, Sexuality, and Reproductive Health*, 1,2 92-100

Miller, R , A Fisher, K Miller *et al* (1997) *The Situation Analysis Approach to Assessing Family Planning and Reproductive Health Services A Handbook*, Africa Operations Research and Technical Assistance Project, The Population Council, New York, New York, USA

MORRIS, M , C Podhisita, M Wawer and M Handcock (1996) "Bridge populations in the spread of HIV/AIDS in Thailand", *AIDS*, 10 1265-1271

Moses, S , E Muia, J Badley *et al* (1994) "Sexual behaviour in Kenya implications for sexually transmitted disease transmission and control", *Social Science and Medicine*, 39,12 1649-1656

Mukaire, J , F Kalikwari and B N Maggwa (1997) *Integration of STI and HIV/AIDS Services with MCH-FP Services A case study of the Busoga Diocese Family Life Education Program Uganda*, Busoga Diocese Family Life Education Program and Africa OR/TA Project II, The Population Council, Nairobi, Kenya

Olukoya, A and C Elias (1996) "Perceptions of reproductive tract morbidity among Nigerian women and men", *Reproductive Health Matters*, 7 56-65

Piot, P and J Rowley (1992) "Economic impact of Reproductive Tract Infections and Resources for their control", pp227-249 in German, A , K Holmes, P Piot and J Wasserheit (eds), *Reproductive Tract Infections Global Impact and Priorities for Women's Reproductive Health* Plenum Press, New York, NY, USA

Plummer, F , J Simonsen, D Cameron *et al* (1991) "Co-factors in male-female sexual transmission of Human Immunodeficiency Virus Type 1", *Journal of Infectious Diseases*, 163 233-239

Schulz, K , J Schulte and S Berman (1992) "Maternal health and child survival Opportunities to protect both women and children from the adverse consequences of reproductive tract infections", pp145-184 in German, A , K Holmes, P Piot and J Wasserheit (eds), *Reproductive Tract Infections Global Impact and Priorities for Women's Reproductive Health* Plenum Press, New York, NY, USA

Temmerman, M , F Ali, J Ndinya-Achola *et al* (1992) "Rapid increase in both HIV-1 infection and syphilis among pregnant women in Nairobi, Kenya", *AIDS*, 6 1181-1185

Twahir, A , B N Maggwa and I Askew (1996) *Integration of STI and HIV/AIDS Services with MCH-FP Services A case study of the Mkomani Clinic Society in Mombasa Kenya*, Mkomani Clinic Society and Africa OR/TA Project II, The Population Council, Nairobi, Kenya

Wasserheit, J and K Holmes (1992) "Reproductive tract infections Challenges for international health policy, programs and research", pp7-34 in German, A , K Holmes, P Piot and J Wasserheit (eds), *Reproductive Tract Infections Global Impact and Priorities for Women's Reproductive Health* Plenum Press, New York, NY, USA

WHO (1991) "Management of patients with sexually transmitted diseases", *World Health Organization Technical Report Series*, 810



The Population Council  
P O Box 17643  
Nairobi

The Population Council  
One Dag Hammarskjold Plaza  
New York, NY 10017