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AN INTEGRATED APPROACH TO OPERATIONS RESEARCH FOR STRENGTHENING FAMILY PLANNING PROGRAMS: A CASE EXAMPLE IN KENYA*

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ABSTRACT

The Africa Operations Research/Technical Assistance Project developed an integrated approach to introducing and institutionalizing family planning in Kenya. This approach consisted of: 1) the development of the Situation Analysis methodology to diagnose problems; 2) the development of a computer simulation model for choosing operations research (OR) strategies; 3) an OR training workshop; 4) the implementation of three OR field studies testing educational approaches to several program problems; 5) a conference to review the findings and implications from the three studies. Technical assistance was provided in all phases. Results from the field studies indicated that all of the tested educational interventions had at least some short-term impact. Health talks with waiting maternal and child health (MCH) clients doubled the proportion adopting family planning; a simple educational package for clinic supervisors, along with a day of training, raised the proportion of family planning clients receiving education and referral for voluntary surgical sterilization (VSC) and increased the number of tubal ligations at a referral hospital. Waiting time was reduced. The Division of Family Health of the Ministry of Health has submitted plans to introduce these interventions into several districts of the country in the near future. Full institutionalization of OR requires additional cycles of program activities.

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INTRODUCTION

Operations research (OR), according to Fisher, is a five step process of problem identification, solution development, field testing of potential solutions, dissemination of findings, and utilization of findings [1]. The OR process is intended to serve as a management tool that provides information for improving the availability, accessibility, and quality of family planning services. OR investigates variables under the control of family planning managers, for example, supply factors.

The United States Agency for International Development (USAID) has had a large and long-standing program of support for the introduction and use of OR in health and family planning programs throughout the world. For the last four years the OR effort in sub-Saharan Africa has been conducted by the Population Council’s Africa Operations Research/Technical Assistance Project, based in Nairobi, Kenya. The project strategy and process for introducing and institutionalizing OR within the Ministry of Health Maternal and Child Health/Family Planning program in Kenya is described. First, the strategy and components of the “integrated approach” are presented [2] followed by a brief report on each of the three OR studies developed and implemented as part of the integrated approach. Finally, there is a discussion of the extent to which this overall program of activities achieved its objectives.

THE INTEGRATED APPROACH TO OR

Phillips, commenting on the institutionalization process noted the need “...to identify policies and actions beyond project funding and technical assistance that will sustain the process of organizational research, change, and development that OR is designed to achieve” [3, p. 503]. The strategy the Africa OR/TA Project tested for introducing and sustaining the OR process in Kenya was called the integrated approach. The specific components of the integrated approach consisted of:

- the identification of the strengths and weaknesses of the clinic components of the family planning program with the development of the Situation Analysis study methodology in 1989 [4, 5];
- the development of a simplified computer spreadsheet model to help test and establish priorities for OR field studies of potential intervention strategies and solutions to the specific problems discovered in the Situation Analysis Study [6];
- a workshop to strengthen the operations research skills of the Kenyan participants and foster collaboration between investigators from various public and private institutions, and develop research proposals for subsequent
funding by the Africa Operations Research and Technical Assistance Project (Africa OR/TA Project);

- a National-level workshop to disseminate the findings and review the policy and programmatic implications of the studies;

- an evaluation of the impact of these integrated efforts on the ability of participating institutions to conduct OR studies, on the development of further collaborative working relationships, and on programmatic and policy decision-making related to the MOH’s family planning program; and

- continuing technical assistance for all phases of the integrated approach.

These activities represent the first of a series of assessment-action-utilization cycles that, over time, were expected to strengthen and institutionalize OR in the family planning program of Kenya (see Figure 1).

The Situation Analysis Study

The first element of the integrated approach was the development of the Situation Analysis methodology for assessing program strengths and weaknesses. This study evaluated the functioning of each family planning subsystem—such as

![Figure 1. Integrated approach to operations research.](image-url)
education, supervision, logistics, equipment—and the quality of care provided to clients in the program. The study included data from observations and interviews conducted at a stratified random sample of ninety-nine of the approximately 1,000 service delivery points (SDP) in Kenya and observations of the delivery of services to forty-eight new family planning clients. The authors concluded that the Kenyan program was stronger than had been suggested by the literature [7], but it also documented numerous problems which may be addressed appropriately through the process of operations research. These problems included:

- a weak information, education and communication sub-system;
- a client counseling program which may overemphasize oral contraceptives and underemphasize voluntary surgical methods;
- a weak management and supervision sub-system with 60 percent of SDPs reporting two or fewer supervisory visits in the previous six months;
- a weak training program which had provided refresher training to only 16 percent of key nursing staff; and
- an inadequate system for screening MCH clients for family planning interest and need.

The quality of care observed, however, was rated moderately high, but problems existed, especially with long waiting times and poor follow-up procedures.

Development of a Computer Simulation Model

The second step in the integrated approach shown in Figure 1 was the development of a simplified computer spreadsheet model of clinic-utilization patterns, educational experiences, and fertility levels in the population [2]. We used the modeling tools of traditional operations research to focus the attention of applied researchers on problems which have the greatest impact on the output of the system, namely reduction of the total fertility rate. Rather than using a complex computer model requiring high levels of sophistication, we developed a relatively small spreadsheet model which can be more easily understood by managers, policy-makers, and less-technical investigators. The intent of the model is to show how women flow through the MCH/family planning system on paths leading, on average, to either higher or lower total fertility. By experimenting with the model, we were able to see more clearly how the system works and to focus attention on the most productive intervention strategies. Based on earlier work in Indonesia [8] and the achievement of our current efforts, we feel that modeling techniques can be successfully used in less-developed countries and that their use should be viewed as a valued component of family planning-oriented operations research.

In the model (see Figure 2), we have limited our view of the family planning system to government health clinics that provide both maternal and child health
(MCH) and family planning services. During a typical year, women may decide to come to a MOH health clinic for family planning services, MCH services, or both. If they come, they move on to the next step. If not, there is no further action in the model. We assume that women who do not attend the MOH clinics are less likely, on average, to be using modern contraceptive methods and thus, experience a higher fertility rate. Once women have entered the clinic, they may or may not receive family planning (FP) education. This education may be in the form of a health talk given once or twice each morning to women who come for MCH services or detailed counseling on the use and consequences of methods given by
nurses. If education has been forthcoming, the next decision step is whether the women do or do not accept a modern family planning method. In some cases, education is not followed by adoption of a method. For example, due to logistical problems, the clinic may not have contraceptives or needed supplies. If they receive a family planning method, the women must next understand how to correctly use the method. Due to pressures of time, the clinic staff may not have given adequate information or made sure that the women fully understood the instructions. For those who correctly use the FP method, the final decision is whether or not they correctly use the method for at least twelve months. To repeat, each step identifies an intervention point where improvements are possible.

Women who flow correctly through the system have more control over their reproduction and thus, should experience a lower fertility rate. In the ideal service-delivery system, all women who seek family planning services would flow through these steps in the correct manner. Unfortunately, this does not occur. Instead the vast majority of women move along less efficient paths, implying higher rates of fertility. The intention of the program manager is to ensure that women flow through the MOH clinics in the correct direction. Operations research serves to help the manager by identifying and testing solutions to flow problems. The model was developed both to help understand the components of the family planning system and to determine the potential impact on fertility of various education and service strategies that might be adopted to deal with the problems uncovered in the Situation Analysis study. Ideally, when reasonable probabilities and fertility rates are estimated for each path using all available studies and estimates, the final output of the model is the total fertility rate of the country.

While there is no guarantee that the simple model is essentially valid, or is even better than many alternative models that could be proposed, it did allow the investigators to focus their research into several strategies for dealing with specific FP problems uncovered in the Situation Analysis Study which hold relatively high potential for reducing fertility.

OR Training Workshop

The third step in the integrated approach featured in Figure 1 was an OR workshop for training and proposal development, held in June, 1990 [2]. This workshop included staff from the Ministry of Health (MOH), National Council for Population Development, and The Population Studies Research Center (University of Nairobi) and Egerton University. We felt that the research skills within the MOH were weak and that they could be strengthened by encouraging

1 Some women may miss the education talk but still accept a method.
collaboration between the MOH and stronger research institutions such as the participating universities. In fact, the majority of the participants who had been nominated by their employing institutions for participating had little or no research training or experience. Thus, the workshop faculty developed numerous supportive materials, provided step-by-step assistance, and encouraged investigations of straightforward OR problems, using basic research designs, that would provide participants with positive field experience, and still make a contribution to solving real program problems.

The OR training workshop began with the results of Situation Analysis study and a clinic visit to see conditions in the field. Also covered were the topics of research design and decision making techniques, and the use of the computer simulation spreadsheet model. The model was explained in detail to workshop participants. They learned about decision trees, were able to estimate transition probabilities in the model (see Figure 2) from one decision point to the next, and to test the potential effects of various intervention strategies. One important proposal which arose from this experimentation was "Eliminating missed opportunity for family planning education in MOH MCH/FP clinics." We studied the model and noted that within a clinic setting, the greatest reduction in fertility could be achieved by providing women who come for MCH services with more family planning education.

As part of the workshop, we experimented with several other intervention strategies. These included education efforts aimed at improving use of modern family planning methods, and follow-up programs to encourage continued use over time. None of these additional changes had much effect on total fertility rate. By analyzing the model output, we were able to see that improvements in the system have little effect because so few women are receiving family planning services. Thus increased efficiency can have a big effect among the few women coming to a clinic for family planning services but little effect in the general community. Other than reducing missed opportunities at MCH clinics, dramatic improvements in fertility control only arise when more women come to MCH/FP clinics for services.

While we recognize the need for community-based intervention efforts, we also know that inefficient clinics cannot adequately serve the needs of an increasing number of clients. We reasoned that improving the efficiency and quality of clinic operation should be our first priority, especially since community-based distribution (CBD) of family planning is under experimentation and policy review by other agencies [9].

The leadership of each participating institution, including the Deputy Director of the Division of Family Health, who serves as Head of the Family Planning Program of Kenya, participated in mid-course and final reviews of the research topics being considered, and the justification for their selection. All gave their enthusiastic approval and support for the OR studies. Later, some of these program and policy decision-makers visited OR field sites during study
implementation, which is generally believed to increase managerial interest, attention, and use of forthcoming results.

Our approach to OR training and proposal development, including the use of a computer spreadsheet model, was used successfully in Indonesia by the authors in a program to promote OR on management and control of acute respiratory infections (ARI) in children [8]. In Indonesia, the workshop produced six OR proposals. All were funded and five of the six were completed. In hindsight, the one failure resulted from contractual agreements that did not permit continued on-site assistance. Hence we were encouraged by this experience and incorporated many of the same features in our Kenyan workshop.

The training and proposal development activities in Kenya were improved over the approach we used in Indonesia through the addition of continuing on-site assistance by staff of the Africa OR/TA Project. These staff provided technical assistance to all phases of the research projects: obtaining final approvals for the studies, assisting in preparing needed study materials, training of field workers, and supervising field activities. One co-author, the only consultant not based in Kenya, continued to consult on various issues that arose over the life of the studies and returned to Kenya to consult on the data analysis and the presentation of the results at the Dissemination Seminar in July, 1992.

THE OPERATIONS RESEARCH STUDIES

Three of the four OR studies developed in the OR training workshop received full approvals and were funded and implemented, representing the field studies shown in Figure 1. Each of these studies is presented briefly in this section.

1. Eliminating Missed Opportunities for Family Planning Education in MOH MCH/FP Clinics [10]

The Situation Analysis Study found that only 40 percent of clinics had any educational material, and none had any materials that were given to a woman to bring home and show to her husband. Additionally, “health talks,” which are supposed to be held daily in all clinics, occurred in only 32 percent of the clinics on the day of the research visit; only 16 percent of the clinics surveyed held health talks that included the topic of family planning on the day of the research visit.

Although the one-to-one counseling was rated moderately good in the Kenyan program, only a small proportion of women visiting the clinic received this form of education. It appears that most receive no family planning education, and that the opportunity to educate the large number of women attracted to an MCH program—one of the major reasons for operating an integrated program—is missed, despite the fact that clinic protocols call for daily “health talks” at all clinics.
The proposed solution to the problem of "missed opportunities" was to provide family planning education for women attending MCH clinics. The study assessed the effectiveness of three family planning education strategies among women attending MCH/FP clinics: 1) a brochure presenting reasons for use and types of FP methods; 2) a health talk on FP which contained similar material but in a presentation-discussion format and a display of contraceptives; and 3) a brochure and health talk together.

Methods

The study followed a standard time series, pre-test, post-test, control design for testing three different intervention strategies: brochure only; family planning health talk only; and brochure and family planning health talk. The dependent variable was the proportion of MCH clients adopting family planning thirteen months before and five months after the educational interventions were initiated.

In the three intervention clinics, selected staff were trained to administer the appropriate educational strategy selected, that is, 1) pass out a simple brochure which had been prepared in three languages to all MCH clients, paying attention to the appropriateness of the language to each client (Kimbimbi Health Center); 2) hold a health talk which discussed the reasons for family planning and specific methods, showed examples of each method, and invited questions and discussion (Kianyaga Health Center); and 3) pass out the appropriate brochure and hold the health talk (Sagana Health Center). In the fourth health center in the district, Baricho, no change was attempted in educational strategies.

Clinic records were utilized to determine the proportion of MCH clients adopting family planning before and after the interventions in each center. Prior to the start of the study, staff indicated concern that they would not be able to supply family planning services to clients because of shortages of supplies such as gloves, sterilizing lotion, and cotton. Therefore the researchers provided these supplies directly to all clinics, including the control clinic.

Results

The health talks approximately doubled the rate of MCH clients accepting family planning at Kianyaga during the following five months from about 1.5 to 3 percent of MCH clients. At Kimbimbi, where the brochures were used alone, there was a dramatic reduction of family planning acceptance. The great emphasis on brochures, and several supervisory visits to check whether brochures were being pass out appeared to reduce any other ongoing educational activities, and thus may have substituted brochures for other more effective activities such as health talks. The Sagana Clinic, where MCH clients received both health talks and brochures, had a high rate of family planning acceptance among MCH clients prior to the beginning of the study—approximately 10 percent of MCH clients accepted family planning. During the first two months of the five month long intervention period, there was an immediate near doubling of the proportion of
MCH clients adopting family planning. After two months, however, the staff trained to conduct the intervention activities were transferred away.² This resulted in a substantial reduction in family planning acceptance over the next three months. The control clinic, Baricho, had a slight improvement in family planning acceptance, most likely a result of its improved supply situation.

Conclusion and Recommendations

The researchers concluded that: the health talk was effective at recruiting new family planning acceptors (and continuing clients); the brochure by itself was not effective; and the management and staff issues at the clinic offering the health talk and brochure were more important determinants of family planning use than the intervention program. The investigators recommended that: health talks on family planning should be provided to all Kenyan women coming to MCH/family planning clinics; a brochure should not be used as the only source of family planning information; and that more testing should be done to determine if a health talk with a brochure is more effective than a health talk with no brochure.


The Ministry of Health program relies to a large extent on oral pills and depo-provera, which are widely available at MOH service delivery points (SDPs). The most common method of contraception among older married women with four or more children, however, is voluntary surgical contraception (VSC)—the second most popular modern method of family planning in Kenya among all women currently using a modern method of family planning [12].

The MOH offers temporary methods of family planning integrated with other MCH services in approximately 1,000 SDPs around the country. VSC, however, is offered at only eighteen larger hospitals. There is high and increasing demand for VSC in Kenya, especially mini-laparotomy under local anesthetic (ML/LA). However, the Situation Analysis Study documented that overall, only 20 percent of women who were observed receiving counseling, received any information on female sterilization, and only four percent received any information on vasectomy. Thus, while the MOH is making substantial progress with the VSC program in hospitals, it appears that the large increase in demand for VSC among Kenyan women is taking place with little supportive education and referral from the MOH’s large number of MCH/family planning clinics.

The solution to the problem of lack of VSC counseling developed and tested was an education and training package for clinic supervisors that encourages the

² This transfer took place during the Christmas holiday season and went undiscovered for two months.
provision of VSC education and referral as a regular component of family planning counseling.

Methods

The operations research project used a quasi-experimental design containing a pre-test, intervention, and post-test. Ten clinics were selected in Nakuru District, located about three hours drive from Nairobi. With the assistance of The Association for Voluntary Surgical Contraception, a package of educational materials was developed for clinic supervisors which: brought them up-to-date information on VSC technology; provided information on the proven popularity of tubal ligation in Kenya; and provided encouragement to clinic supervisors to use the materials to train other clinic staff. The package of educational materials served as the basis of a one day training program for clinic supervisors.

Before and after surveys were conducted with departing new FP clients for two weeks outside the ten experimental clinics to determine the proportion receiving VSC education, type of contraception accepted, and demographic characteristics of clients. The number of VSC procedures performed at three referral sites was also monitored during the study period.

Results

There were no significant differences in the population of women interviewed before and after the clinic intervention on education level, marital status, or the proportion wanting no more children. However, there was a substantial increase in the proportion of women hearing about VSC and all major contraceptive methods. In fact, after the intervention, tubal ligation was mentioned to all clients and vasectomy was mentioned to nearly all clients. In addition, a shift in contraceptive choice took place away from oral contraceptives and condoms and toward injectables and VSC. This was especially pronounced among women who wanted no more children.

After the intervention, all three referral hospitals experienced an immediate increase in the number of VSC procedures performed. This effect was most apparent at Egerton College Hospital, an unusually modern, clean, and well-run facility where the study PI was located. However this increase was short-lived. The number of VSC procedures retreated to previous levels (or below) over the next eleven months in all three hospitals.

Conclusions and Recommendations

As a result of the VSC education and training package for clinic supervisors, we concluded that: nearly all female clients heard about tubal ligation and vasectomy; women were more likely to choose longer acting contraceptive methods; in the short term, women were more likely to have VSC operations at referral hospitals; and overtime, the impact of the one-time intervention diminished. The researchers recommended that: the VSC education and training package should be adopted
and used by clinic supervisors and their staff in MOH clinics; the material should be re-presented and re-discussed with the staff at periodic intervals to maintain the quality of client VSC education; further research should be done on the duration of the periodic training intervals; and referral hospitals must be supplied with adequate sutures, gloves, bandages, and other supplies to handle the increased demand for VSC operations.


The Situation Analysis Study indicated that clients at MOH clinics had long waiting times, and at the busiest clinics this frequently amounted to more than 2.5 hours. In a study of rural Kenyan women, clients expected to spend an average of 5.6 hours to receive a supply of pills, including travel and waiting time [14]. This was, not unexpectedly, identified as a constraint to utilizing family planning facilities. Further, the Situation Analysis study found that, while it was difficult to obtain suggestions from clients, reducing waiting time was the most frequent suggestion for program improvement.

The solution to the problem of long waiting time that was developed and tested was the introduction of a process that enabled clinic staff to identify client flow problems using client flow analysis (CFA) and to develop solutions to reduce waiting time.3

Methods

The operations research project used a quasi-experimental pre-test, post-test design which included determining observed waiting time before and after the intervention. The intervention consisted of a process for assisting staff to diagnose and solve problems in client flow, clinic organization, and waiting time.

Five rural clinics were selected for this study. However, due to several problems associated with first-time use of the methodology, only three produced usable data. The investigators and clinic staff conducted a one day CFA in each clinic. They then met with clinic staff to review the findings, the problems highlighted, and to discuss staff suggestions to improve client waiting time. Staff committed themselves to implementing their suggested changes and, after four months, researchers with staff assistance again determined waiting time with a new CFA.

Results

The initial client flow analyses confirmed that clients wait a long time in the clinics (and that contact time with the providers is brief). In reviewing this situation, staff at the three clinics developed different packages of changes for

3 This was a more limited application of procedures similar to those developed by AVSC in the COPE framework.
experimentation. In Kirogo Clinic, staff decided to: start services at 8:00-8:30 AM instead of 9:00-9:30; sterilize and prepare instruments for next day use in the late afternoon, rather than wait until the following day; separate revisiting family planning clients from other MCH clients; and stagger lunch shifts so that services continue through the lunch period. This package of interventions resulted in a 46 percent decline in waiting time from 257 minutes to 139 minutes ($p < 0.001$), which was a definite improvement, but still quite long.

Another package, developed by the Othaya Clinic staff, also started services on time, had the night staff sterilizing and preparing instruments for next-day use, but encouraged FP clients to come in the afternoons. This set of interventions was not as effective in reducing waiting time. It resulted in a 16 percent decline from 130 minutes to 109 ($p < .05$).

At the Kangema Clinic, a package was developed involving preparations the day before services and a plan to stagger client arrival times. Waiting time in this clinic actually increased 96 percent from just over 150 minutes to nearly 300 minutes. However, this increase was no doubt caused by the departure of half their staff between the two CFAs, and points out that there are clear limits to what simple adjustments in scheduling can accomplish in the face of true staff shortages.

**Conclusions and Recommendations**

When client flow problems were brought to the attention of clinic staff, they were able to develop and implement simple, inexpensive solutions that reduced waiting time for women coming to clinics. However, they were not able to reduce waiting time if there was a shortage of staff, equipment, or supplies.

The researchers recommended that: 1) clinic staff should be made aware that waiting times are long and of major concern to women coming for MCH/FP services; 2) a management program should be implemented that trains clinic staff to conduct simple waiting time surveys of all women on a given day coming for MCH/FP services, use the waiting time information to make changes to improve client flow, and evaluate with periodic surveys to determine whether waiting time is being reduced; 3) Situation Analysis Studies should be modified to include waiting time for clients during the research visit; and 4) additional investigations are necessary to determine whether any combination of interventions such as those developed in the most successful clinic have wide applicability.

**DISSEMINATION AND UTILIZATION OF FINDINGS**

The findings and implications of all three studies were presented at a dissemination workshop held in Nairobi in July 1992. The objectives of the workshop were to present the research findings, to discuss lessons from the Africa OR/TA Project, and to stimulate general discussion on the results and implementations of the studies and make recommendations for the future. Besides high officials in the
Ministry of Health, the conference was attended by persons from the most prominent donor and technical assistance agencies in Kenya. Included as a participant was the Deputy Director of the Division of Family Health in the MOH, who had given active support and encouragement for the development of all aspects of the integrated approach shown in Figure 1. She and colleagues are developing plans for strengthening the quality of family planning services in several districts of the country, including the implementation of recommendations from the three OR Projects. Because of the recency of the OR studies, however, the government has not had time to enact the various recommendations. This point is discussed more fully in our concluding section.

DISCUSSION AND CONCLUSIONS

As mentioned above, we have not yet demonstrated that the cycle featured in the integrated approach has come full circle from situation analysis to dissemination and utilization of findings. The following discussion relies to a large extent on informal observations of activities on many different levels that are still in process. Nevertheless some conclusions already are apparent.

The Situation Analysis methodology has had the largest impact so far of any of the activities in the integrated approach. Since it was first developed in Kenya in 1989, the methodology has been used in eight African countries. Additionally, studies using the methodology have been completed, are being planned, or are under review in several other countries around the world. Components of the study have been refined. Modules for studying pharmacies, community based distributors, private physicians, and non-using MCH clients have been added. Situation Analysis studies have expanded in purpose as well as in scope. Originally carried out to identify programmatic strengths and weaknesses that might profitably serve as a focus for administrative changes and OR studies, they are now carried out for planning and adjusting technical assistance, as a focus of organizational development activities, and more.

At the same time that the Situation Analysis methodology has rapidly diffused, it has become clearer that OR projects that rely on single interventions tend to have little long-term impact. These "one shot" intervention projects are increasingly rejected or expanded in favor of longer term, multiple intervention activities.

Certainly in the first cycle of the integrated approach, the full objectives of the program may not have been achieved. However, much has been accomplished in building collaboration between Kenyan institutions, strengthening research skills, developing new methods for selecting issues for OR studies, coordinating technical collaboration, and in disseminating and utilizing the OR results to strengthen the family planning program. Most important, the head of the Family Planning Program of Kenya has developed plans for using the three OR study recommendations to strengthen the quality of family planning services in several districts of the country.
Besides policy changes, the project appears to have been successful in increasing the research skills of the participants. In addition to the workshops, the ongoing technical assistance, and the field experience, some of the participants took computer courses to strengthen their research skills. The development of the computer simulation model for use in the selection of OR issues for study has prospects for wider utilization. Substantial coordination and collaboration of technical assistance to the Kenya program was achieved in this program. The dissemination seminar provided a much needed venue for strengthening communication among various technical assistance agencies in Kenya. Kenyan staff took the lead role in implementing the three OR studies, all of which produced useful information. While there is much room for critical appraisal of the research design and implementation, they appeared to be within the usual range for field studies [15].

After only one cycle of the integrated approach featured in Figure 1, the knowledge and attitudes of Kenyan leaders towards OR have increased, but the institutionalization of OR in the Kenyan context remains in process. The next steps include continued analysis of the existing situation, occasional modeling of selected components of the family planning service system, repetition of the training and research component, support of new and varied studies, and encouragement to disseminate and use findings. Additional attention must be devoted to establishing a research unit to be responsible for local OR implementation, a strategy the Project and Ministries are using with some success in Nigeria and Burkina Faso. Continuing assistance from the variety of donor programs, including the Africa OR/TA Project’s integrated approach and other OR studies, should help further improve the quality and impact of family planning services and strengthen Kenya’s nascent fertility transition [16].

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4 Population Communication Services provided prototypes and consultation on the development of the brochures used in the missed opportunity study. AVSC collaborated on the development of the educational package for clinic supervisors and participated in the training program. AVSC also assisted on the use of CFA in the waiting time study.
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