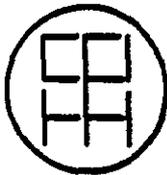
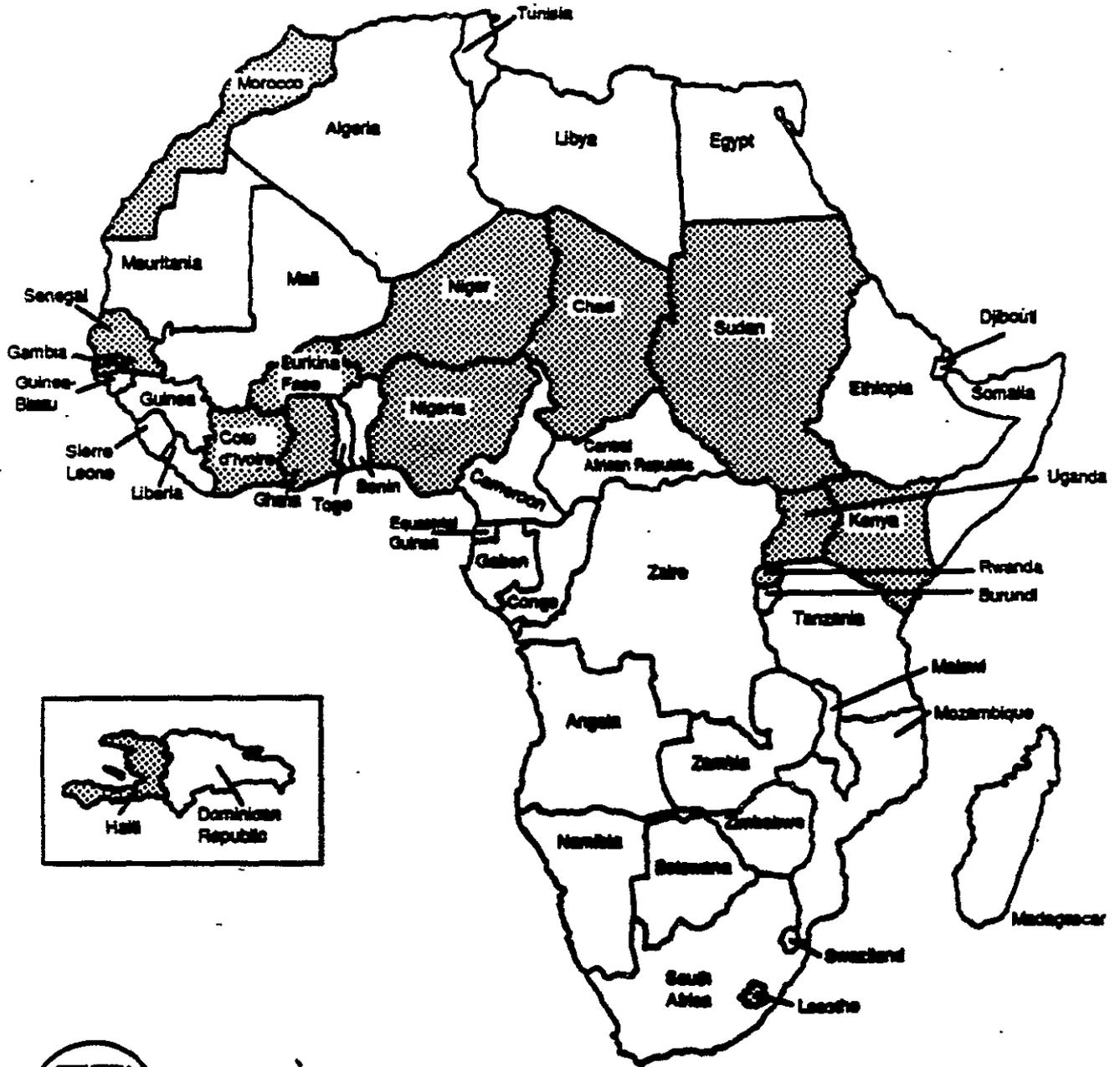


OPERATIONS RESEARCH PROGRAM

Overview of Lessons Learned, 1984 - 1990



Center for Population and Family Health
School of Public Health
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Columbia University, New York

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**OPERATIONS RESEARCH PROGRAM
CENTER FOR POPULATION AND FAMILY HEALTH
COLUMBIA UNIVERSITY**

**Overview of Lessons Learned
1984-1990**

Operations Research Program conducted under Cooperative Agreement DPE 3030-A-00-4049 with the United States Agency for International Development, Office of Population, Research Division

**Operations Research Program
Center for Population and Family Health, Columbia University**

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Executive Summary

The Center for Population and Family Health (CPFH) of Columbia University conducted 26 family planning operations research projects in 12 African countries and Haiti from 1984 to 1990 under A.I.D. Cooperative Agreement number DPE 3030-A-00-4049. This report is an overview of lessons learned from the field projects as well as about conducting operations research, primarily in sub-Saharan Africa.

The most fundamental lesson learned from the operations research (OR) projects was that there does indeed exist a demand for family planning services in sub-Saharan Africa. Surveys and focus groups showed levels of support among both women and men to be higher than often assumed by government officials and the international community.

Second, the projects demonstrated that family planning programs, offered alone or in combination with other health services, were acceptable to the authorities and the public. Data from Sudan and Rwanda also suggest that the rate at which projects achieve substantial success has accelerated. Moreover, the projects demonstrated that new delivery strategies such as community and market-based distribution, were acceptable and effective as evidenced by their expansion and replication.

Besides the knowledge gained from OR activities about family planning service delivery in Africa, important lessons about OR itself have also been learned. Data from OR projects have been extremely effective in diminishing political and medical barriers to wider contraceptive availability in Nigeria, Burkina Faso, Niger and Senegal. Another lesson is the importance of the close relationship between the service and research elements

of the project. Successful models included OR being conducted by the service personnel themselves or by trained university researchers in close collaboration with them.

The OR designs and data collection methods used in each project, of necessity, depended on program needs and country resources. Given the relatively early stages of many countries' programs, demonstration and pilot projects were usually more relevant and practical than quasi-experimental designs. Similarly, large scale surveys were avoided where simplified clinic and community surveys and service statistics could provide the data needed for program management and evaluation.

The institutionalization of OR within ministries of health and other service organizations is a long-term process, but one that has begun. By stressing OR as a management tool and by avoiding complex data collection and analysis, the projects have spread OR skills among service delivery and management staff. Also, the participation of university faculty in Sudan and Nigeria, for example, ensures a permanent repository of OR experience.

In CPFH's experience, OR has been most useful in the development, testing and replication of delivery models and for elucidating general service delivery principles. It has been relatively less useful in the determination of universal delivery models or program components.

CPFH's OR experience is specific to the time frame and the regions within which it worked. OR needs and challenges in Africa and elsewhere will shift as programs mature, as different target groups are identified, as cost issues become even more prominent, and as AIDS exerts its toll.

Introduction

This report of the operations research (OR) conducted by the Columbia University Center for Population and Family Health (CPFH) covers activities from 1984 to 1990, under Cooperative Agreement DPE 3030-A-00-4049 with the United States Agency for International Development, Office of Population, Research Division. During these years, CPFH completed 26 OR projects in 12 sub-Saharan African countries and Haiti as well as numerous technical assistances visits, conferences, workshops and seminars in several other countries (see Figure 1 and Appendices). The report is an overview of lessons learned about family planning program development and the conduct of operations research, primarily in sub-Saharan Africa. Detailed descriptions of each project may be found in a separate report entitled "Five Year Report, October 1, 1984 - September 30, 1989: Operations Research Program" (Center for Population and Family Health, Columbia University, 1989). Other sources of information on the individual projects are listed in the Bibliography.

The principal functions of CPFH OR in the African context have been to support new family planning programs, to encourage the political and medical acceptability of family planning, and to improve program management. In most sub-Saharan African countries, family planning programs are in early stages of development with insufficient resources and limited political support.

According to the Lapham and Mauldin scoring of family planning program effort in the early 1980s, most of the African countries that were hosts to CPFH operations research projects had very weak programs (Table 1).¹ The Population Crisis Committee's reworking

¹ Robert J. Lapham and W. Parker Mauldin. "Contraceptive Prevalence: The Influence of Organized Family Planning Programs." Studies in Family Planning 16(3) 1985:117-137.

of the Lapham and Mauldin data gave country scores on access to family planning ranging from 4 (Burkina Faso) to 21 (the Gambia) out of a possible 100 (also shown in Table 1).² Improvements in access in these countries in the past decade is a phenomenon we attribute in part to operations research.

In five countries (Burkina Faso, Côte d'Ivoire, Haiti, Niger, and Uganda) OR projects implemented or guided initial service delivery at the national or local level. In another five countries (Ghana, Nigeria, Rwanda, Senegal, and the Sudan) projects initiated new delivery modalities in regions where family planning services nominally existed but had achieved only marginal success. In Chad, data for national policy makers on family planning knowledge, attitudes, and practices (KAP) were the first ever collected in that country. In the Gambia and Lesotho, OR focused on discrete aspects of service delivery within established and functioning programs. (Projects in Indonesia and Morocco entailing intensive training and technical assistance in OR for family planning program development and evaluation are not discussed in this report which focuses on sub-Saharan Africa.

The working definition of OR which guided CPFH research design and implementation is brief: operations research is the "application of research methods to improve action programs."³ OR aims to provide data on priority issues of direct interest to managers, including socio-cultural information to increase program acceptability, measures of the effectiveness of program components, information regarding the feasibility of new program strategies, and guidance for cost reduction. An important hallmark of OR is that specific actions are taken on the basis of the research results.

² Population Crisis Committee. "World Access to Birth Control." Wall chart, 1987.

³ J.A. Ross, J. Donayre and R. McNamara. "Perspectives on Operations Research," International Family Planning Perspectives 13(4) 1987:128-135.

CPFH and its organizational counterparts in Africa have in general selected research designs according to the maturity of the program and the contraceptive prevalence level of the country, as well as by the nature of the research questions. In countries with low contraceptive prevalence and programs that are just getting off the ground (or still in the planning stage), quasi-experimental projects and comparison tests of different strategies were judged to be impractical and inappropriate. Instead, diagnostic and evaluation studies and pilot demonstration projects served to give evidence of a demand for family planning, establish a solid foundation for neophyte programs, and generate data to evaluate the effectiveness of the approaches selected. The research designs permitted extensive technical assistance for management and evaluation. (Designs and methods are shown in Table 1.)

Thirteen of the 26 CPFH projects were demonstrations, seven were diagnostic or evaluative in nature, four were quasi-experimental and two compared alternative strategies (see Figure 2). This contrasts with the family planning operations research projects undertaken in Latin America by the Population Council in the INOPAL Program. Just under 60 percent of these projects had a quasi-experimental design, in keeping with the more advanced level of existing services in that region.⁴

The scope of the research objectives often called for sets of interlocking qualitative and quantitative methods. Analysis of service records, community sample surveys and mini-surveys of service clients were the principal quantitative methods used. Qualitative methods included focus group discussions, open-ended interviews, participant observation, situational analysis and case studies.

⁴ Population Council. "Operations Research to Improve Family Planning and Maternal-Child Health Service Delivery Systems in Latin America and the Caribbean: INOPAL Project Seventh Semi-Annual Report, 15 September 1987-14 March 1988." New York: Population Council, 1988.

The following sections cover the lessons learned about family planning program development and about the conduct of operations research -- its strengths and its limitations, and the practical adaptations to a sometimes difficult but usually rewarding research environment.

Lessons Learned from Family Planning Service Programs

Operations research has been called upon to answer basic questions regarding the demand for and the acceptability of family planning and the feasibility and effectiveness of different service delivery strategies. Important lessons about these issues have emerged from the wide range of CPFH OR experiences.

Demand for family planning exists

While baseline OR data indicates very low levels of family planning use in project areas, survey and focus group results suggest the presence of a substantial demand for family planning services among women and men. Thirty-four percent of the female community survey respondents in rural Sudan reported that they wish to use family planning now or in the future. In Côte d'Ivoire, that proportion was 48 percent, 56 percent in urban Chad, 79 percent in urban Niger, 81 percent in peri-urban Ghana, and 86 percent in urban Burkina Faso. The proportions of males expressing similar intentions in urban Niger and Burkina Faso were 58 and 59 percent, respectively. Within countries, usage of and desire for family planning is expected to be higher in urban than in rural settings; nonetheless, it is evident that there is a latent demand even in rural areas.

Focus groups were conducted with women in almost all the project areas and with males in Burkina Faso, Niger, Senegal and Uganda. Although participants in virtually all

groups raised concerns regarding contraceptive safety and discussed societal pressures to have large families, comments regarding family planning were generally favorable, for spacing especially but not excluding limitation. Reasons given for positive attitudes often differed strikingly between men and women -- an important consideration in the development of IEC and service strategies. For women, the principal motivation for family planning use was health and the need to 'rest'. Males were more likely to discuss the financial implications of having numerous children, particularly in urban settings where large families are seen as prohibitively expensive.

In both male and female groups, there was the perception that members of the opposite sex were more interested in having a greater number of children and had less desire to use family planning. Focus group and KAP survey participants of both sexes reported only limited or no discussions of family size, family planning and related issues with their partner or spouse. Where HIV infection was prevalent, both men and women indicated a growing interest in condom use.

Family planning programs are acceptable

Major political and secular changes in family planning acceptance are occurring in Africa. In the early 1980s, the political milieu dictated that most family planning activities be integrated with health. All of CPFH's OR projects initiated prior to 1984 offered integrated health and family planning, the latter service being introduced after the health interventions, at least in part to enhance political and community acceptance.

Since 1985, opportunities to provide family planning as the initial or sole project activity have increased. The original market-based project in Ibadan, Nigeria, in which local traders sell contraceptives along with their regular commodities, combined family

planning with health services. Based on the Ibadan project's demonstration of the acceptability of this form of contraceptive distribution, the subsequent three market projects supported by CPFH provided family planning alone. Family planning acceptance in the two new projects in Nigeria and the third in Ghana were approximately the same as that of the Ibadan project at the same stage of development. The community-based education and distribution project in Rwanda was also able to offer family planning as the sole service. Although some projects offering family planning may subsequently elect to add other health services, the provision of contraceptives alone appears to be becoming increasingly acceptable to policy makers and clients. Simultaneously, more health programs are expressing an interest in adding family planning services, as was the case in projects in rural Senegal and Côte d'Ivoire.

There is evidence that the rate at which projects achieve substantial levels of contraceptive acceptance has accelerated in the past decade. The original Sudan Community-Based Family Health project, north of Khartoum, was in the field for seven years before prevalence of use of modern contraceptive methods rose from eight to 20 percent. The expanded project area, farther to the north, had a similar baseline modern method prevalence level, but achieved 20 percent within three years. The acceleration may be attributed to secular changes and to project improvements resulting from previous experience. In Rwanda, the CBD project initiated in 1987 in two experimental areas recorded prevalence rates of 36 and 12 percent in just sixteen months, from pre-project levels below five percent.

New delivery strategies are acceptable and effective

As the concept of family planning gains credibility and acceptance, debate still occurs on acceptable ways of delivering these services. Service delivery strategies which have been tested in Latin America and Asia are frequently still considered to be new in Africa. Concern on the part of government policy makers and the medical establishment has meant that delivery models accepted in other regions, including community-based distribution (CBD) by non-medical personnel, market-based distribution and social marketing, have required retesting for safety and acceptability.

Of 21 service projects in sub-Saharan Africa, ten were designed to improve clinical family planning services, six were concerned with community-based distribution, and five were market or commercial sales projects. All of the latter group were conducted in anglophone countries (Nigeria, Ghana and the Gambia), in keeping with the greater conservatism encountered in francophone settings. Of the non-clinical projects, all represented the first introduction of the innovative delivery system in the given country or region.

The acceptability of the new strategies has been demonstrated by their continuation and replication. Of the 16 projects in which service delivery was directly implemented, at least two-thirds had an assured continuation as the initial OR phase drew to a close. CBD projects in the Sudan and Nigeria have been incorporated into the programs of local Ministries of Health and have been expanded substantially beyond the original project areas. The first market-based project in Ibadan, Nigeria, has been replicated in two other sites in Nigeria as well as in Ghana. The two replications in Nigeria, also OR projects, were requested by local governments with the goal of long term continuation. Testing of market distribution for incorporation within the national social marketing program is

continuing in Ghana. The objective of the Rwandan project to introduce community-based distribution and IEC has been met and the IEC component is being expanded to the national level. An OR project in Ghana to train and supervise traditional birth attendants to deliver primary health care, including contraceptives, is being replicated nationally by the Ministry of Health with donor support (including USAID and UNICEF). The Ministry of Health and Social Affairs in Burkina Faso used OR to test fully-integrated services in MCH centers in the capital and now plans to integrate services in all centers throughout the country. Following the decentralization of family planning services to MCH centers in Niger, the Ministry of Public Health and Social Affairs replicated OR project components to improve management and supervision in the centers.

Experience has shown that sustainability is enhanced if major institutions, such as ministries of health, are actively involved in projects from their early stages. In a few projects which purposely maintained a low profile because of the relative sensitivity of the strategy being tested, sufficient momentum was not achieved for quick large-scale replication. It must be recognized that not all risks taken in OR pay off immediately. However, recent events in the Côte d'Ivoire suggest that such seeds will indeed bear fruit: the staff, data and overall experiences of a rural CBD OR project, which was considered extremely controversial by the Ministry of Health throughout its life, are now being called upon to contribute to the government's developing population policy.⁵

Assessing the acceptability of delivery strategies to clients has been an important research issue. Service statistics, client intercept surveys, focus groups, and mini-surveys in the community were conducted to measure client satisfaction. Changes in project design

⁵ Personal communication with Dr. Yao Kouandou Félicien, Medecin-Chef, Secteur de Santé Rurale de Bouaflé, Côte d'Ivoire, February, 1991.

occurred as needed. In the Ibadan Market-Based Project, for example, analysis of service statistics indicated that the type of produce in the stall (e.g., meat, fish, tinned food, cosmetics) had little effect on contraceptive sales, but the sex of the market trader did influence distribution (women recorded higher sales). Although male distributors were not dropped from the project, additional emphasis was placed on recruiting female distributors.

In general, guided by results of OR projects, new strategies reached a growing number of clients. In its second year of operation, the Ibadan Market-Based Project served 1,000 clients monthly. Results from the Ghana Private Midwives Project indicated that each practitioner was serving an average of six new family planning clients per month; of their earlier clients, 80 percent were first time ever-users of contraceptives. The project had achieved a ratio of one new family planning client per 1.5 deliveries. Given that deliveries represent the principal function of the private maternities, the growing importance of family planning is evident.

The ability to document project effects on community contraceptive prevalence is more variable. Not all projects were designed to increase contraceptive prevalence directly. An example is the two OR projects conducted in Niger which were to improve community IEC and to strengthen services in existing clinics. Although the numbers of clients seen in the clinics increased, the OR contribution to contraceptive use independent of other secular changes is impossible to gauge. The Senegalese Client Records Project, which improved the use of service statistics and collected data to facilitate the introduction of simplified and less costly client screening, was not designed to ascertain how many more clients are served nationally as a result of the project. The majority of the projects gathered service statistics on contraceptive distribution but for methodological and practical considerations the research designs did not include prevalence surveys.

Among those projects which measured prevalence rates in the population, the Sudan Community Health Project and the Rwanda Promotion and Delivery of Family Health Services Project documented substantial increases, as described above. A community survey in Oyo State, Nigeria suggested that the Community-Based Distribution Project had a more limited effect, although service statistics indicated approximately 20,000 distributions of contraceptives per year in a rural area which previously had no access to the service.

Lessons Learned about Operations Research in Africa

Besides the knowledge gained from OR activities about family planning service delivery in Africa, important lessons about OR itself have also been learned. These include the effective uses of OR for policy influence; the importance of relevant host institutions; the need for appropriate research designs and data collection tools; the usefulness of and difficulty with institutionalizing OR; and the limitations inherent in generalizing operations research results.

Political and medical acceptance of family planning

Most of CPFH's OR projects have had demonstrable policy implications beyond the project itself. In Burkina Faso and Niger, KAP survey and focus group data indicating demand for family planning and the lack of substantial resistance among both adult females and males reassured policy makers on public acceptance of the concept and facilitated the expansion of service delivery. In Senegal, the Client Records Project, which analyzed several thousand patient records from clinics, provided data for the liberalization of very restrictive medical regulations governing the distribution of hormonal contraceptives. The

Sudanese project testing IUD insertion by nurse-midwives had as its goal a change in policy which would permit the delivery of this method by non-physicians and official recognition of this expanded role is anticipated.

In both Nigeria and the Sudan, CBD programs initiated as OR projects have been sustained and expanded by the respective Ministries of Health. Prior to the projects, distribution of oral contraceptives had been a physicians' preserve.

Political and medical uncertainty regarding the acceptability and safety of market-based distribution in Ibadan, Nigeria was neutralized by research and evaluation data to demonstrate that the project was accepted by market clients and adhered to high standards of quality and safety. As a result, the program is now a component of the municipal government's primary health care service.

For policy impact, there is a need to report even partial results often -- in the country and in a forum that permits discussion. In Nigeria, workshops on the rural village and urban contraceptive distribution systems, once their feasibility was demonstrated, generated interest nationally and laid the foundations for development of similar programs throughout the country. Periodic workshops in Ghana for governmental and non-governmental organizations increased the understanding and support necessary for a nationwide effort to enlist TBAs in the government's maternal and child health and family planning program.

The francophone countries in sub-Saharan Africa are, in general, moving more cautiously in family planning programming than the anglophone countries, and the impact of evaluation on public policy has been toward more efficient and effective clinical services. In Burkina Faso, a survey indicating demand for family planning and a national conference to present the results was followed first by an assessment of the clinical

services that were available, and then by restructuring to integrate family planning with maternal and child health services. The findings of the baseline KAP survey in Niamey, Niger were discussed at a conference convened for that purpose and the recommendations made by participants included decentralization of services and a test of CBD -- an impressive change in a country where contraceptive distribution by midwives was controversial only three years earlier.

The importance of relevant host institutions and personnel

About three-quarters of the OR projects were conducted totally or partially within the public sector, and the remainder were hosted by non-governmental family planning associations, independent midwives' associations, and the like (see Figure 2). In keeping with the greater conservatism and centralization of family planning services in francophone Africa, all projects in these countries were conducted with ministries of health or the equivalent. Most francophone ministries were unaccustomed to working with the private sector and were resistant to the idea, even where opportunities existed.

Ideally, OR is conducted by personnel within the agency or ministry where the service program under study is based. Such involvement ensures that the issues addressed are relevant to the program, that the results are understood, and that ownership of the data leads to actions taken on the basis of the results. Unfortunately, African ministries and agencies suffer from severe staff and resource shortages. Less than half of the sub-Saharan countries with CPFH-sponsored OR had designated family planning units or programs with research and evaluation departments. None of these departments had previously conducted OR and only one had fielded a community survey. The case of Burkina Faso, where the

national family health program was managed by a handful of people, none of whom had prior research experience, was not atypical.

In four CPFH OR settings (Côte d'Ivoire, Nigeria, the Sudan, and Uganda), collaboration developed between in-country universities and service providers. Faculty acquired experience in the applications of research to service delivery, and service personnel were introduced to research and analysis. Such collaboration was generally easier to establish where faculties were themselves program oriented, such as within departments of community medicine or, as in Nigeria, a department of obstetrics and gynecology with a community orientation. Where universities did not have such departments, it proved more difficult to identify useful linkages between a university and a service institution.

Attempts to link service providers with external private or parastatal research agencies provided mixed results. In Burkina Faso, for example, the lack of resources within the ministry originally led to a contract with a local external research group to conduct KAP surveys. This increased costs, did not strengthen the ministry's own research capabilities, and resulted in somewhat less ministry "ownership" of the data. In Lesotho, on the other hand, the Planned Parenthood Association (LPPA) had a longstanding research collaboration with an external agency. In this situation, involvement of the research group in the LPPA's OR project proved effective and the agency's services will be called upon for future LPPA OR needs. Lessons learned regarding OR have thus not been lost to the LPPA.

Selection of OR designs and data collection methods

The principle that program managers and, when possible, policy makers, be involved in planning and implementing the research has influenced the selection of methodologies. Few of the essential partners have been skilled researchers, yet the likelihood of obtaining their active participation and application of results has been enhanced where they have a strong grasp of the methods used. The technical assistance needs of the host agencies were often pronounced. On average, CPFH personnel conducted five technical assistance visits per project per year. Full time resident advisors were placed in four of the sub-Saharan countries (Côte d'Ivoire, Niger, Senegal and Uganda) as well as in Haiti and Indonesia.

Mini-surveys, client intercept surveys, bivariate analysis of service statistics, and focus groups have been acceptable ways to involve program managers and staff in the acquisition of quantitative and qualitative data. In several sites, focus groups had the additional utility of revealing to service program staff how they and the services they provide are perceived in the community -- not always a flattering picture but one that was an incentive to make some improvements in client-provider transactions.

OR approaches need to be adapted also to the stage of maturity of the family planning program. As indicated above, in Africa, OR has been most useful in surmounting political barriers and in strengthening the early stages of service implementation. Therefore, diagnostic and demonstration/pilot projects have had the greatest applications. OR to compare different strategies has been less appropriate to date, in part because implementation of comparison projects can dilute the substantial effort required to institute an initial delivery system, and because they place additional demands on the very limited number of personnel in the host institution.

Quasi-experimental designs can be useful in contexts where basic services already exist and there is relative stability in the research environment. In settings where services are not yet available, withholding them from a population group for the sake of a research design raises ethical questions and is frequently politically unacceptable in the host country. Moreover, implementing a quasi-experimental design is time and labor intensive, further stretching resources. The identification of comparable baseline populations required in the quasi-experimental model is problematic in situations where basic socio-demographic data are scarce and in the many African countries with hundreds of ethnic groups living in close proximity. Also, it may be impossible to maintain the boundaries of experimental and control cells. As one example, in the CPFH OR project in Rwanda, two rural areas were the experimental cells for community outreach and supply, and a third was the control. Enthusiasm created by the early results of the intervention was such that the decision was made to replicate the program nationally (including in the control area) some six months before the post-test.

Interest expressed by ministries and research counterparts and a lack of other data led to the implementation of KAP surveys in CPFH OR projects but, given the cost and difficulty of implementing such surveys with limited resources, this methodology has decided drawbacks in OR in Africa. Simplified clinic and market-based surveys were successfully adapted for baseline and monitoring purposes in Côte d'Ivoire and Nigeria; repeated mini-surveys proved very useful for project follow-up in the Sudan and in Burkina Faso.⁶ It is hoped that, as simplified research methods become better known in Africa and

⁶ For a description of mini-surveys and their application in operations research, see T. Bennet et al. "Mini-Survey in Matrix Format," New York: Columbia University Center for Population and Family Health, 1984 (CPFH Working Paper Series #4).

more baseline data becomes available from other sources, the need and appetite for large scale KAP surveys in OR projects will decrease.

With respect to analysis of program costs in OR, a number of CPFH's projects collected data to determine the relative costs of different program components and of serving acceptors, but none conducted a classic study of cost-effectiveness. Most programs were not sufficiently well-established to permit an analysis of the relative cost of competing program strategies and most projects, as pilot demonstrations, did not enjoy economies of scale. Projection of costs for expansion and replication in other settings based on the experience of pilot programs is hazardous at best.

Institutionalizing OR

Despite its value for family planning service development in Africa, OR has proven difficult to institutionalize. The shortage of human and financial resources results in low priority being given to research and evaluation. Units dedicated to these functions are seldom established. Rapid staff transfer and turnover is routine in many African ministries and research skills and institutional memory are lost.

CPFH projects have worked to overcome these obstacles by stressing the OR as a management tool; by avoiding complex data collection and analysis; by inculcating data collection skills; and by working with universities which can act as more permanent repositories of OR experience. OR workshops designed to enlarge the cadre of individuals trained in OR techniques were carried out in most project countries. They ranged in scope from a few days on the use of specific methods for program evaluation or computer applications, to two weeks with central and regional MCH personnel in Morocco, to the ongoing training supplied through consultation with resident advisors and project monitors.

These strategies have had positive results. In Nigeria and the Sudan, collaborating universities are acting as OR resources for ministries and agencies beyond the scope of the original projects. The Ministry of Health in Ghana has established an OR unit as a direct outcome of the OR projects and training.

Limitations of OR

In CPFH's experience, OR has been most useful in the development, testing, and replication of delivery models, such as community and market-based distribution. OR has also assisted in fine-tuning individual program components, including supervision and training.

OR has been relatively less useful in the development of universal models for program components, such as transferable strategies for worker selection, training or supervision. OR does help to elucidate general principles, such as the evidence from the Sudan CBD project concerning the advantages of phased training and service delivery, or the fact that younger, literate midwives may outperform older or illiterate counterparts. However, given the very different contexts and resources available to projects, a specific approach may not be replicable in a new setting. For example, men performed well as contraceptive educators and distributors in the Rwandan CBD project and in the market-based project in Lagos, but were less effective than women in the markets in Ibadan.

Thus, a compilation of "lessons learned from OR" does not provide a blueprint for new projects. OR is also of limited usefulness at this time in sub-Saharan Africa in predicting whether one service delivery mode will necessarily yield a greater number of acceptors than another, or in projecting what prevalence levels can be achieved through any one strategy. The expansion or replication of a successful strategy to a new setting still

necessitates a pre-project phase of data collection (albeit abbreviated) to determine whether modifications are needed and ongoing monitoring to ensure the transplant has taken successfully.

Discussion

The experiences described in this report are primarily those of one organization and they occurred within a limited time frame. Other agencies involved in operations research will have encountered different milieus, possibilities and needs. OR in Africa will itself change as programs evolve. Nonetheless, the historical overview of the CPFH program provides a perspective to assess the utility of OR and to consider future directions.

Given the secular and economic changes occurring in Africa, including urbanization, demand for family planning will continue to grow. OR has been successful in both stimulating and identifying the first waves of interest and in rapidly developing an initial response. OR has had demonstrable effects on policy and program development. OR has enabled innovative family planning systems to take root despite very cautious host country attitudes.

The role of OR as a policy tool has been recognized. It has also been noted that "policy issues vary by region and country. In Africa, the important policy issues still are concerned with the acceptability of community-based programs,... In Latin America and Asia, the policy issues of the greatest importance deal with quality of care, method mix, cost-effectiveness and sustainability."⁷

⁷ J. Townsend, A. Eschen and M. McEvoy. Summary of the meeting on the interaction between operations research and policy in the population field. Rosslyn, Virginia, 20 January 1988.

More recently, OR in Africa has begun to serve in the development of strategies which are transferable to the national level. Freedman has pointed out that early program and research experience in Asia was not dissimilar to what is currently occurring in sub-Saharan Africa:

The "successes" among the Asian programs are largely those that began quietly and with little fanfare, with pilot studies, experimental programs, or programs targeted to specific subgroups. Basically, they began as programs to test the waters and to produce an initial success story.⁸

It should be noted however, that to take an OR prototype and to treat it a magic bullet which answers national needs has its dangers. OR projects generally enjoy better management, field supervision and evaluation. Expansion should and will occur, but needs to include adequate monitoring and the flexibility to change the approach if the expansion encounters problems. It has proven easier to institutionalize the new service delivery models than the OR and evaluation capacity which enhanced the models' initial successes. A major challenge for family planning OR in Africa is to convince already overstretched institutions to maintain or expand their research and evaluation capabilities. As Freedman added in his analysis of research and programs in Asia:

The "less successful" programs (e.g., India, Pakistan, Bangladesh) too early became standardized, rather inflexible, programs applied uniformly on a national basis, often regardless of local readiness, local conditions, availability of qualified personnel, or the need to learn and to adjust to local and distinctive national conditions.

As Heiby noted in a discussion of primary health care OR, equally applicable to family planning, there is at present no sound basis for predicting the degree to which the

⁸ R. Freedman. "The Contribution of Social Science Research to Population Policy and Family Planning Program Effectiveness," Studies in Family Planning 18(2) 1987:57-82.

findings of one program can be productively incorporated into another.⁹ Heiby goes on to add that OR should be viewed primarily as a problem solving methodology, with an emphasis on method as much as technical results. These observations are congruent with CPFH's experience that OR was of substantial use to host programs but that approaches developed in specific projects were not instantly replicable, except in very similar settings.

Determining the most appropriate use for OR has occasionally resulted in tensions between donor agencies and local counterparts. Donor agencies require information they can apply to programs in multiple settings, and they need to show tangible results in the form of contraceptives distributed. The goal of local family planning managers is to develop solutions to country-specific problems and concerns.

Another tension noted in OR in Africa, particularly in francophone countries, has centered on the definition of OR itself. The idea of action research geared to management needs, which may sacrifice some statistical power for the sake of rapid data collection, has proved to be a new and occasionally disconcerting concept for local counterparts. In many countries, the only survey expertise resided in the national census bureau or demography institutes. Substantial technical assistance was required to assure OR personnel that the planned research was valid even if the demographers were less than impressed with the proposed sample sizes and sampling methodologies. As OR acquires a clearer identity and track record, such problems will diminish.

A number of African countries are still in the earliest stages of family planning program implementation and it is probable that the role of OR in the coming decade will continue to encompass basic infrastructure development. However, as family planning

⁹ J.R.Heiby. "Operations Research in Primary Health Care." In Health and Family Planning in Community-Based Distribution Programs, edited by M. Wawer, S. Huffman, D. Cebula and R. Osborn. Boulder Colorado: Westview Press, 1985:433-443.

programs mature in other countries, OR will devote fewer resources to the development of initial systems and "proving" that innovative strategies will not wreak havoc in local cultures. Future challenges include meeting the needs of underserved groups, such as men, lactating women, and adolescents. Cost-effectiveness analysis will find an important niche in the OR repertoire, particularly given the severe financial constraints inherent in African programs. AIDS will generate OR questions, including that of the advisability of explicitly linking condom distribution for contraception and AIDS prevention. The need to address specific African issues - principally how to meet ever growing demand in the face of scarce resources - will require program oriented studies well into the future.

Figure 1

Operations Research Program
Countries of Activity

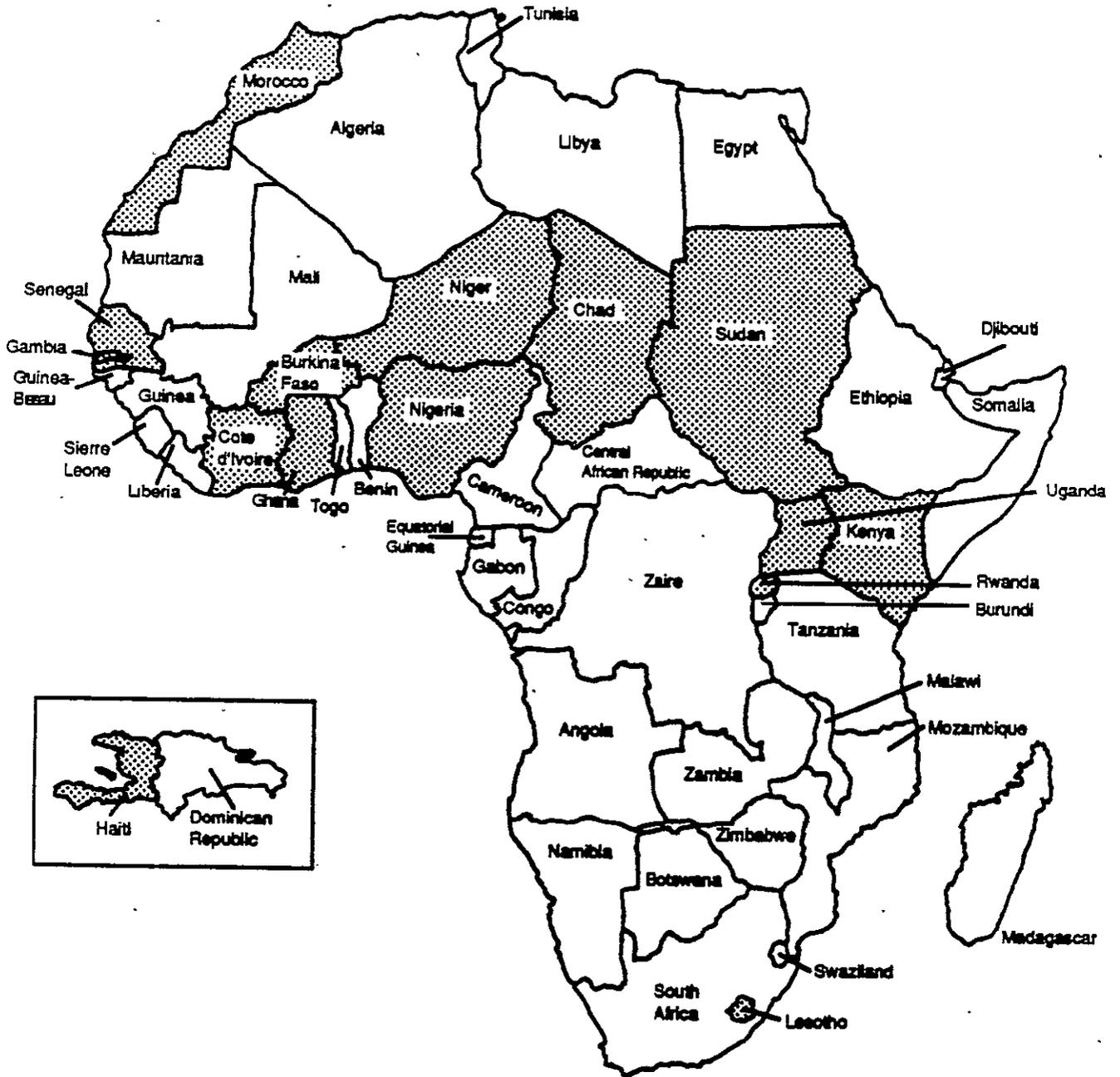


Figure 1
CPFH Operations Research Projects, 1984 - 1990

Country	Project	Sector	Research Design and Methods*	Project Description and Service Delivery Model	Current Status
Burkina Faso	Strengthening Family Health Delivery	Public	Demo; KAP MS FG StrObs SS	Integration of FP into clinics' MCH services	Delivery model being replicated nationally
Chad	Research to Develop a FP Program in N'Djamena	Public	Diag; Clinic KAP FG	Data collection to guide start-up of FP in clinics	Aided in formulating policy
Côte d'Ivoire	Community Participation in PHC, Bouaflé Rural Health Sector	Public/ Private	Demo; KAP FG SS	Rural CBD of PHC and FP	Interest in repli-cation of delivery model; contribution to policy change
Côte d'Ivoire	Promotion of FP to Reduce Maternal Mortality	Public (Univ)	Demo; Clinic KAP FG SS	Integration of FP into maternities/ MCH clinics	FP continues in the maternities and clinics; contribution to policy change
The Gambia	FP Distribution by Commercial Agents	Private	Quasi-exp; MS IDI SS	FP commercial retail sales with two supervision strategies	OR completed
Ghana	Private Sector FP through Midwives and Maternities	Private	Eval; KAP FG	Evaluation of new integration of FP into private maternities	Model being replicated nationally and possibly in other countries

* Research methods:

FG Focus group discussions
MS Mini-survey

IDI In-depth interviews
SA Situational analysis

KAP Knowledge, attitudes and practices survey
SS Service statistics

StrObs Structured observation

Figure 1 (cont.)
CPFH Operations Research Projects, 1984 - 1990

Country	Project	Sector	Research Design and Methods*	Project Description and Service Delivery Model	Current Status
Ghana	Market-based FP Delivery	Private	Demo; MS SS	FP social marketing in local markets	Replication planned in urban and rural areas
Ghana	FP and PHC by TBAs in Rural Ghana	Public/ Private	Comparison KAP FG SA	Introduction of FP and health through TBAs with comparison of supervision	Sustained and expanded nationally
Ghana	TBA Expansion Project	Public/ Private	Demo of expansion	Testing original TBA design in a new region	Being replicated nationally
Haiti	CHWs and Rally Post Outreach in Mirebalais	Private	Quasi-exp; MS SS FG KAP	CBD and rally post promotion	OR completed, recommendations implemented
Haiti	FP Access and Continuation through CB Outreach in Cité Soleil	Private	Quasi-exp; SS FG IDI KAP StrObs	CHW home visits for promotion and supply	OR completed, recommendations implemented
Lesotho	Study of FP Dropouts	Private	Diag/Eval; FG IDI	Qualitative research to improve NGO program	Recommendations being implemented
Lesotho	Assessment of CBD Program	Private	Diag/Eval; FG IDI	Qualitative research to improve NGO program	Recommendations being implemented

* Research methods:

FG Focus group discussions
 MS Mini-survey

IDI In-depth interviews
 SA Situational analysis

KAP Knowledge, attitudes and practices survey
 SS Service statistics
 StrObs Structured observation

Figure 1 (cont.)
CPFH Operations Research Projects, 1984 - 1990

Country	Project	Sector	Research Design and Methods*	Project Description and Service Delivery Model	Current Status
Niger	Family Health Motivation and Referral	Public	Diag/Eval; KAP FG SS SA	Evaluating IEC and services program coverage	OR guided service decentralization
Niger	Integration of Family Health in Niamey MCH Centers with Emphasis on Supervision	Public	Diag/Eval; FG IDI SA	Data collection to improve FP integration in MCH clinics	Supervision guidelines adopted
Nigeria	Ibadan Market Based Distribution	Public (Univ)/ Private	Demo; MS FG IDI StrObs SS	FP and health delivery in local markets	Project replicated in multiple sites
Nigeria	Lagos Market Based Distribution	Public/ Private	Demo; MS IDI SS	Delivery of FP in local markets	Program sustained
Nigeria	Ilorin Market Based Distribution	Public/ Private	Demo; MS FG StrObs SS	Delivery of FP in local markets	Program sustained
Nigeria	Oyo State CBD of FP/Health (Expanded Project)	Public	Demo; FG IDI SS	Testing expansion of FP/health CBD	Program sustained by MOH

* Research methods:

FG Focus group discussions
 MS Mini-survey

IDI In-depth interviews
 SA Situational analysis

KAP Knowledge, attitudes and practices survey
 SS Service statistics
 StrObs Structured observation

**Figure 1 (cont.)
CPFH Operations Research Projects, 1984 - 1990**

Country	Project	Sector	Research Design and Methods*	Project Description and Service Delivery Model	Current Status
Rwanda	Promotion/Delivery of FP in Ruhengeri	Public	Quasi-exp; KAP FG SS	Introduction of CBD and community IEC by volunteers	IEC replicated nationally
Senegal	Integration of MCH and FP in Diourbel District	Public	Demo; KAP FG	Introduction of FP in rural PHC/MCH clinics	OR completed
Senegal	Client Records as a Program Planning/Management Tool	Public	Diag; SS	Client record analysis of FP continuation, side effects, barriers and access	Improved record keeping; liberalized distribution of contraceptives
Sudan	Paramedic insertion of IUDs	Public	Comparison SS StrObs	Test of IUD insertion by midwives	Continued IUD insertion by midwives
Sudan	Community Based Family Health Project	Public (Univ)	Demo; KAP MS SS	Testing FP and health CBD by midwives	Program transferred to MOH
Sudan	Expansion of Community Based Family Health Project	Public	Demo; KAP MS SS	Testing CBD expansion	Program sustained by MOH
Uganda	Prevention of HIV Transmission, Rakai District	Public (Univ)	Demo; KAP FG IDI SS	Epidemiology and prevention of HIV transmission with VHWs	OR ongoing; strategy serving as model for national program

* Research methods:

FG Focus group discussions
MS Mini-survey

IDI In-depth interviews
SA Situational analysis

KAP Knowledge, attitudes and practices survey
SS Service statistics

StrObs Structured observation

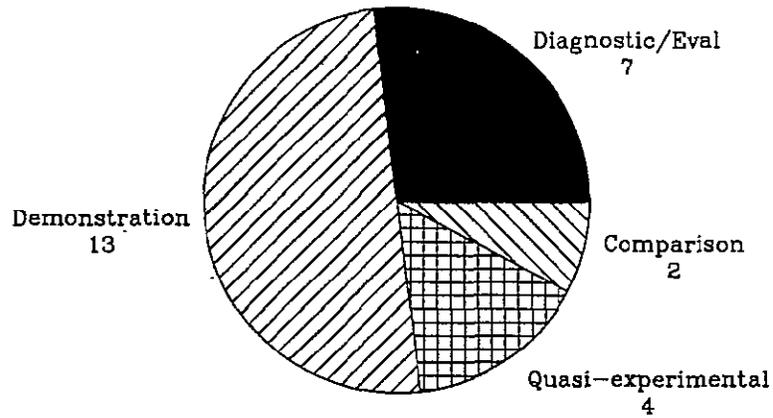
Table 1

**Demographic and Family Planning Program Characteristics
CPFH Operations Research Program Countries**

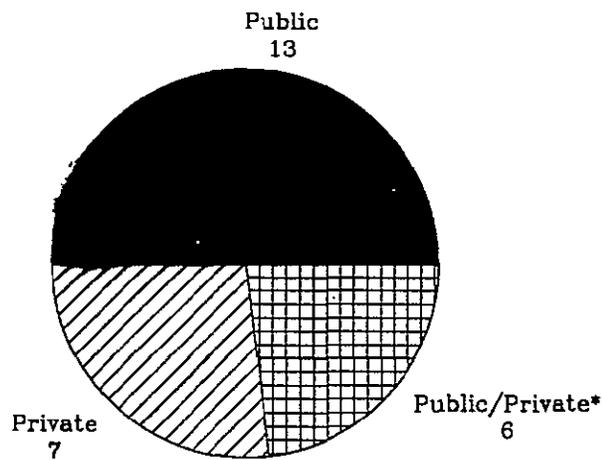
Country	CBR	TFR	Program Effort (Max 120)	Access Score (Max 100)
Burkina Faso	48.6	6.5	5.2	4
Chad	43.5	5.9	8.3	5
Côte d'Ivoire	44.5	6.7	8.3	7
The Gambia	49.0	6.4	31.2	21
Ghana	46.2	6.5	21.3	13
Lesotho	41.0	5.8	16.7	10
Morocco	32.5	5.1	42.3	33
Niger	49.6	7.1	5.5	8
Nigeria	49.6	7.1	15.4	21
Rwanda	52.0	7.5	27.6	13
Senegal	46.2	6.5	27.2	20
Sudan	45.2	6.6	9.0	6
Uganda	50.4	6.9	20.5	10
Haiti	35.0	5.7	42.9	35
Indonesia	32.3	4.1	89.9	67

Sources: Crude Birth Rates and Total Fertility Rates are from J.A. Ross et al. Family Planning and Child Survival, Center for Population and Family Health, Columbia University, New York, 1988, Tables 1 and 4 (Gambia from UNFPA, "Republic of the Gambia: Report of a Mission on Needs Assessment for Population Assistance." New York: UNFPA, October 1981 (Report #44). Family planning program effort scores are from W. P. Mauldin and R.J. Lapham, "The Measurement of Family Planning Inputs," in Organizing for Effective Family Planning Programs, edited by R.J. Lapham and G. B. Simmons, pp. 545-82, Table 3. Access to birth control scores are from Population Crisis Committee, "World Access to Birth Control," Wallchart, 1987.

Figure 2
Type of OR Project
(N=26)



Institutional Setting of OR Projects
(N=26)



* Public management of private sector service providers

APPENDICES

Operations Research
Projects, Institutions and Principal Investigators

Operations Research Conferences

Operations Research Workshops, Seminars and Training Sessions

Operations Research Program Subagreements

Bibliography

**Operations Research Program
Center for Population and Family Health, Columbia University**

Projects, Institutions and Principal Investigators

Burkina Faso

- Title:** Strengthening Family Health Delivery in Burkina Faso/ Integration of Family Planning into the Public Health Services in OUagadougou
- Institution:** Direction de la Santé de la Famille, Ministère de la Santé et de l'Action Sociale
- PI:** Dr. Bakouan Didier, Directeur de la Direction de la Santé de la Famille (Previous PIs who filled the same MOH post were Mme. Legma Fatimata and Dr. Bamba Azara)

Chad

- Title:** Preliminary Research for the Development of a Family Planning Program in N'Djamena, Chad
- Institution:** Ministry of Public Health
- PI:** Dr. Yankalbe P. Matchok Mahouri, Director General, Ministry of Public Health

Côte d'Ivoire

- Title:** Promotion of Community Participation in a Primary Health Care Program in a Rural Area in Côte d'Ivoire (Bouaflé)
- Institution:** Secteur de Santé Rurale de Bouaflé
- PI:** Dr. Yao Kouandou Félicien, Medecin-Chef, Secteur de Santé de Bouaflé
- Title:** Promotion of Family Planning in Côte d'Ivoire Among Women at High Risk of Maternal Mortality
- Institution:** Centre Hospitalier de Cocody, Abidjan
- PI:** Dr. M. Bohoussou and Dr. N. Kone, Professors of Gyneco-Obstetrics, Centre Hospitalier de Cocody

The Gambia

Title: Contraceptive Distribution by Commercial Agents
Institution: The Gambia Family Planning Association (GFPA)
PI: Mr. Tunde Taylor-Thomas, Executive Director, GFPA

Ghana

Title: Ghana Market Traders: An Operations Research Project
Institution: National Council on Women and Development (NCWD)
PI: Mrs. Zacaria-Ali, Executive Director, NCWD and Mrs. Angelina Wood, Director, Greater Accra Office of the NCWD

Title: Delivery of PHC Services by TBAs in Rural Ghana: An Operations Research Study

Institution: Greater Accra Regional Medical Office, Ministry of Health

PI: Dr. Sam Adjei, Director, National TBA Programme

Title: Delivery of PHC Services by TBAs in Ghana, Expanded Programme

Institution: Ministry of Health

PI: Dr. Sam Adjei, Director, National TBA Programme

Title: Midwives and Maternities in Ghana: An Operations Research Study of Family Planning in the Private Sector

Institution: The Ghana Registered Midwives Association (GRMA)

PI: Mrs. Henrietta Aboagye-Owusu, President, GRMA

Haiti

Title: Operations Research Study Using Community Health Workers and Rally Posts for Family Planning Outreach

Institution: Association des Oeuvres Privées de Santé (AOPS)

PI: Dr. Antoine Augustin, Executive Secretary, AOPS

Title: Operations Research to Improve Access to and Continuation of Family Planning through Community-Based Outreach

Institution: Centers for Health and Development (CHD)

PI: Dr. Reginald Boulos, Director, CHD

Lesotho

Title: Lesotho Community Based Distribution Project Evaluation

Institution: Lesotho Planned Parenthood Association (LPPA) and Lesotho Distance Teaching Centre

PI: Thakaloane Maliehe, Executive Director, LDTC and Samuel Motlomelo and Malineo Sakoane, LDTC

Title: Study of Contraceptive Dropouts in Lesotho

Institution: Lesotho Planned Parenthood Association (LPPA) and Lesotho Distance Teaching Centre

PI: Thakaloane Maliehe, Executive Director, LDTC and Samuel Motlomelo and Malineo Sakoane, LDTC

Niger

Title: Family health Motivation and Referral Project, Niger

Institution: Centre National de la Santé Familiale

PI: Dr. Halima Maidouka, Director, National Family Planning Program

Title: Integration of Family Health into MCH Centers In Niamey, Niger

Institution: Ministère de la Santé et de l'Action Sociale

PI: Dr. Halima Maidouka, Director, National Family Planning Program

Nigeria

Title: Ibadan Market Distribution Project

Institution: University College Hospital, Ibadan

PI: Professor O.A. Ladipo, Department of Obstetrics and Gynecology, University College Hospital, Ibadan

Title: Ilorin Market-Based Distribution Project

Institution: Kwara State Ministry of Health

PI: Dr. David Olubaniyi, Director of Primary Health Care, Kwara State Ministry of Health

Title: Lagos Market-Based Distribution Project

Institution: Mushin Local Government, Lagos

PI: Dr. Taiwo Olumodeji, Medical Officer of Health, Mushin Local Government

Title: Oyo State CBD Health and Family Planning Project: Phase II

Institution: Oyo State Ministry of Health

PI: Dr. M.A. Aboderin, Director of Medical Services, Oyo State Ministry of Health

Rwanda

Title: Promotion and Delivery of Family Planning Services in Ruhengeri, Rwanda: An Operations Research Study

Institution: Office National de la Population (ONAPO)

PI: Mme. Habimana Nyirasafari, Directrice, ONAPO

Senegal

Title: Integration of Family Planning into an Ongoing Primary Health Care Program, Phase I/Phase II

Institution: Ministry of Health, Region of Diourbel

PI: Dr. Lamine Cissé Sarr, Medical Director, Region of Diourbel

Title: Patient Records as a Management Tool for Program Planning in the
Projet Santé Familiale

Institution: Projet Santé Familiale, Ministry of Health

PI: M. Ousmane Samb, Director, Projet Santé Familiale

Sudan

Title: Paramedic Insertion of Intrauterine Devices in the Sudan

Institution: Directorate of Maternal and Child Health, Ministry of Health

PI: Dr. Amal Abu Bakr Osman Arbab, Director of Maternal and Child Health,
Ministry of Health

Title: Sudan Community-Based Family Health Project

Institution: Department of Community Medicine, Faculty of Medicine, University of
Khartoum

PI: Dr. Abdul Rahman El Tom, Chair, Department of Community Medicine,
Faculty of Medicine, University of Khartoum

Title: Sudan Community-Based Family Health Expanded Project

Institution: Department of Community Medicine, Faculty of Medicine, University of
Khartoum

PI: Dr. Abdul Rahman El Tom, Chair, Department of Community Medicine,
Faculty of Medicine, University of Khartoum

Uganda

Title: Study of the Effect of Health Education on the Transmission of Human
Immunodeficiency Virus Infection in the Rakai District of Uganda

Institution: Makerere University

PI: Dr. Nelson Sewankambo and Dr. David Serwadda, Makerere University

Operations Research Conferences

Listed below are conferences conducted to present and discuss operations research results. They were attended by host country public sector officials and representatives of national and international non-governmental organizations.

Burkina Faso: Strengthening Family Health Delivery	May 1990
Chad: Research to Develop a Family Planning Program	October 1988
Ghana: Private Sector Family Planning Through Midwives and Maternities	May 1990
Ghana: Market-Based Family Planning Delivery	June 1990
Ghana: Family Planning and PHC by TBAs; TBA Project Expansion	June 1990
Lesotho: Study of Family Planning Dropouts; Assessment of CBD Program	June 1989
Niger: Family Health Motivation and Referral	September 1988
Niger: Integration of Family Planning in MCH Centers	December 1989
Nigeria: Ibadan Market-Based Distribution	May 1987
Nigeria: Lagos Market-Based Distribution	August 1989
Rwanda: Promotion/Delivery of Family Health in Ruhengeri	September 1989

Operations Research Workshops, Seminars and Training Sessions

<u>Date</u>	<u>Location</u>	<u>Description</u>
3/85	Sudan (Shendi)	OR skills development seminar
4-9/86	Niger (Niamey)	Series of three seminars on OR
4/86	Nigeria (Ibadan)	Workshop on CBD training and evaluation
1/87	Niger (Niamey)	Seminar on qualitative methods: Data collection and analysis
7/87	Senegal (Diourbel)	Workshop on focus group methodology
9/87	Ghana (Accra)	Workshop on qualitative methods
10/87	Rwanda (Ruhengeri)	Workshop on focus group methodology
12/87	Rwanda (Ruhengeri)	Training of Trainers workshop
12/87	Rwanda (Ruhengeri)	Workshop on use of computers
2/88	Nigeria (Ilorin)	Seminar on qualitative methods
3/88	Ghana (Kumasi)	Training on service statistics management
4/88	Morocco (Rabat)	Seminar/workshop on OR
4/88	Nigeria (Ibadan)	Workshop for Zonal Coordinators
5/88	Côte d'Ivoire (Abidjan)	Management Training
11/88	Nigeria (Ibadan)	Workshop on OR for IPPF affiliates
12/88	Swaziland	Workshop on OR for IPPF affiliates
12/88	Burkina Faso (Ouagadougou)	Workshop on clinic management
8/89	Burkina Faso (Ouagadougou)	Follow-up workshop on clinic management
8/89	Mauritius	Workshop on qualitative methods

CPFH Operations Research Program

Subagreements Through September 30, 1990

1. Health and Nutrition Education for Rural Women (Togo) (Note: This project was discontinued soon after the subagreement was signed.)
2. Popline Input Keying Cardware, Inc. (Popline)
3. Ibadan Market Women Project (Nigeria)
4. Strengthening Family Health Delivery in Burkina Faso
5. Paramedic Insertion of Intrauterine Devices in the Sudan
6. Evaluation of Family Health Motivation and Referral (Niger)
7. Family Planning Outreach (Mirebalais, Haiti)
8. Operations Research to Improve Access to and Continuation of Family Planning (Cit  Soleil, Haiti)
9. Accounting Services for MOHSA (Cabinet Abdou Baoua/Niger)
10. Promotion of Community Participation in a Primary Health Care Program in C te d'Ivoire (Bouafl , C te d'Ivoire)
11. Promotion and Delivery of Family Planning Services in Ruhengeri, Rwanda
12. Operations Research as a Tool for Improving Family Health Service in Three Provinces in Morocco
13. Accounting Services (Dar Al Khibra/Morocco)
14. Operations Research on the Appropriate Initiation of Family Planning Services (Diourbel, Senegal)
15. Contraceptive Distribution by Commercial Local Agents (Gambia)
16. Promotion of Family Planning in C te d'Ivoire Among Women at High Risk of Maternal Mortality (CHU-Cocody/C te d'Ivoire)
17. Delivery of PHC Services by TBAs in Rural Ghana: An Operations Research Study
18. Yewi Jaboot ("Choice for the Family") (Pikine, Senegal, cancelled)
19. Patient Record Analysis as a Tool for Program Management (Senegal)
20. Midwives and Maternities in Ghana: An Operations Research Study of Family Planning in the Private Sector

21. Ilorin Market-Based Distribution Project (Nigeria)
22. The Oyo State CBD Health and Family Planning Project: Phase II (Nigeria)
23. Integration of Family Planning into the Public Health Services of the City of Ouagadougou. (Burkina Faso, Phase II)
24. Sudan Community Based Family Health Project: Final Survey
25. The Development of Educational Materials on Sexually Transmitted Diseases for Use in Senegal (with PIACT/PATH; adjunct to subagreement #18, cancelled)
26. Field Testing of Birth Spacing Training Materials (ACT International, USA)
27. Integrating Family Health with the MCH Infrastructure of Niamey (Niger, cancelled)
28. Study of the Effect of Health Education on the Transmission of HIV Infection in the Rakai District of Uganda
29. Services of Joan Haffey in IEC materials development and related matters (PATH, USA)
30. Services of Frank Christopher for Video Production (USA)
31. Promoting AIDS and STD Prevention in Rural Gambia (cancelled)
32. Accounting Services (Coopers and Lybrand, Uganda)
33. Factory Based Operations Research (IFCAD, Côte d'Ivoire, terminated)
34. Lagos Market Project (Nigeria)
35. Ghana Market Project (Ghana)
36. LPPA/LDTC Operations Research Project (Lesotho)

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Direction de la Santé de la Mère et de L'Enfant, Ministère de la Santé, Burkina Faso and Centre pour la Population et la Santé Familiale, Université de Columbia, New York, Etats-Unis. "Consolidation des Services de Prestation Sanitaire En Direction de la Famille au Burkina Faso: Rapport Final." Décembre 1986.

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CHAD

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Ministère de la Santé Publique et Ministère des Affaires Sociales et de la Promotion Féminine, République du Tchad and Programme de Recherche Opérationnelle, Centre pour la Population et la Santé Familiale, L'Université de Columbia, Etats-Unis. "Enquête sur le Bien-Etre Familial à N'Djaména: Rapport Final." Août 1988.

Tafforeau, J., A. Damiba, and J. Haffey. Rapport Préliminaire: Enquête sur le Bien-Etre Familial à N'Djaména. Abidjan, Côte d'Ivoire: Columbia University, Center for Population and Family Health, Abidjan Regional Office, August 1988.

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McGinn, T. S. Adjei, M. Dugan. "Expanding the pilot project to the nation: the case of the Ghana TBA Program." Paper presented at the American Public Health Association Annual Meeting, New York, New York, September 30-October 4, 1990.

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Allman, J. "Conjugal union in rural and urban Haiti." Social and Economic Studies, 1985.

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Allman, J. and S. Allman. "Treatment of childhood diarrhea in rural and urban Haiti: community level knowledge, acceptance and use of oral rehydration therapy." Paper presented to the Maternal and Child Health Program, Pan American Health Organization, February 1986.

Allman, J., G. Lerebours, and J.E. Rohde. "Lessons learned in implementing and evaluating the National ORT Program in Haiti." Paper presented at the American Public Health Association Annual Meeting, Washington, D.C., November 1985.

Allman, J., R. Pierre-Louis, Y. Alexandre, T. Fenn, and J. Wray. "Using volunteers for contraceptive distribution in rural Haiti: costs, impact, and replicability." Paper presented at the American Public Health Association Annual Meeting, Anaheim, California, November 1984.

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