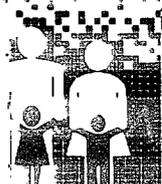


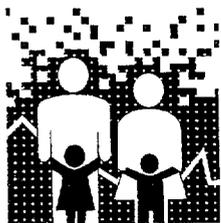
INOPAL III

REPRODUCTIVE HEALTH OPERATIONS RESEARCH

1995 - 1998



REPRODUCTIVE HEALTH OPERATIONS RESEARCH



THE POPULATION COUNCIL seeks to improve the wellbeing and reproductive health of current and future generations around the world and to help achieve a humane, equitable, and sustainable balance between people and resources. The Council, a nonprofit, nongovernmental research organization established in 1952, has a multinational board of trustees; its New York headquarters supports a global network of regional and country offices.

Population Council
One Dag Hammarskjöld Plaza
New York, New York 10017, E.U.A.
Tel.: (212) 339-0500
Fax: (212) 755-6052
E-mail: pubinfo@popcouncil.org
www.popcouncil.org

Population Council
Regional Office for Latin America and the Caribbean
Escondida 110 Villa Coyoacán, 04000 México, D.F.
Tel. (525)554-8610; Fax (525)554-1226;
E-mail: inopalmx@mpsnet.com.mx.

This publication was supported by INOPAL III Project. INOPAL III Project was funded by the U.S. Agency for International Development (USAID), Office of Population, under Contract No. CCP-95-C-00-00007-00.

Responsible for the publication: Silvia Llaguno

©1998 Population Council/INOPAL III

Any part of this document may be reproduced without permission of the authors so long as it is not sold for profit. We would appreciate receiving comments and suggestions from readers.

5

CONTENTS

| | |
|---|----|
| INTRODUCTION | 7 |
| <i>James R. Foreit</i> | |
| chapter 1 | |
| ASSESSING AND IMPROVING ACCESS AND QUALITY OF CARE | 15 |
| <i>Federico R. León</i> | |
| chapter 2 | |
| IN- REACH FOR PROVIDING MORE PREVENTIVE REPRODUCTIVE HEALTH CARE: LESSONS FROM LATIN AMERICA | 49 |
| <i>Ricardo Vernon C. and James R. Foreit</i> | |
| chapter 3 | |
| POSTABORTION CARE IN LATIN AMERICA: A SUMMARY OF OPERATIONS RESEARCH | 59 |
| <i>Timothy King, Deborah Billings, Alison Friedman, Janie Benson</i> | |
| chapter 4 | |
| EXPERIENCES IN THE DIFFUSION OF EMERGENCY CONTRACEPTION IN LATIN AMERICA | 81 |
| <i>Ricardo Vernon C.</i> | |
| chapter 5 | |
| STRATEGIES TO ACHIEVE THE FINANCIAL SUSTAINABILITY OF PRIVATE INSTITUTIONS PROVIDING REPRODUCTIVE HEALTH SERVICES | 91 |
| <i>Carlos Brambila</i> | |

INTRODUCTION

This book presents in-depth reports on promising new interventions that have been developed and important programmatic changes that have been achieved by operations research (OR) in Latin America between 1995-1998. The INOPAL III project has made advances in five areas including access and quality of services, integration of family planning and other reproductive health services, financial sustainability, post-abortion care and emergency contraception. Each of these topics are represented by at least three studies conducted in two or more countries. The OR projects discussed under each topic are not replications of a single study. They use different research designs and address different questions. Nevertheless, when taken together, they provide managers and decision makers with a body of programmatically relevant information on each broad topic covered.

Contraceptive prevalence has increased dramatically in Latin America and the Caribbean during the last two decades. Regionally, almost 70% of couples use some form of contraception and the total fertility rate has dropped to three children per woman. Despite the high demand for fertility control, the chapter by Leon on access and quality of family planning services indicates that rural and indigenous populations still face severe access problems, even in countries with high levels of contraceptive use such as Brazil, Mexico and Peru. INOPAL operations research interventions to increase access range from testing the feasibility and safety of auxiliary nurse IUD insertion to training community health volunteers to refer women to health centers.

The quality of reproductive health services is an important concern in Latin America. Family planning continuation rates are considered to be a quality indicator with higher quality services assumed to produce greater continuation. In one region in Peru, one year family planning continuation (any modern method) was found to be a relatively high 81-85%. INOPAL work in Guatemala, Ecuador and Honduras once again demonstrates that provider job-aides can improve technical competence. Waiting time still seems a problem in many countries with situation analyses in Brazil reporting large numbers of women waiting more than two hours for reproductive health services.

Throughout the region, both public and NGO family planning providers are attempting to integrate family planning and other reproductive health care services. Typically, clients have several preventive or curative health needs but present for and receive treatment for only a single problem. Increasing the number of services provided at a single visit has the potential of increasing program efficiency, reducing travel and opportunity costs for women and, most important, reducing the number of unmet health care needs among program clients. INOPAL findings from Guatemala, Mexico and Peru indicate that program users are not aware of many of the reproductive health services available. Providers do not screen women for needed services or inform them of their availability at the service delivery point. Successful interventions to increase “in-reach” and provide a wider range of needed services are described in the integration chapter of this report.

Abortion related deaths are a major source of maternal mortality in Latin America, and post-abortion treatment consumes an important part of health care budgets in most regional countries. In Latin America, post-abortion care (PAC) in most hospitals is characterized by inpatient treatment with sharp curettage, lack of counseling on possible sequella, and a failure to offer either contraceptive counseling or methods. INOPAL III partner, Ipas tested post-abortion care (PAC) modalities designed to increase the safety of post-abortion treatment, reduce costs and enable women to practice contraception following treatment. The new modality replaces in-patient treatment with sharp curettage with outpatient manual vacuum aspiration, and provides counseling on post abortion care and provision of contraceptive information and methods. The treatment modality was found to reduce treatment costs for service providers and increase contraceptive use among post-abortion women.

Unprotected intercourse, method failure and rape are all indications for the use of emergency contraception (EC). However, EC methods (use of oral contraceptives or IUD insertion up to 72 hours post-coitally) are little known in Latin America and seldom offered by family planning providers. INOPAL III conducted demonstration

projects and workshops to help make the method better known. Projects were conducted in Mexico and Ecuador (by INOPAL partner ICRW) which resulted in which resulted in public and private health care providers, women's organizations, and groups dedicated to assisting victims of sexual violence adding the method to their services. INOPAL dissemination activities were influential in getting EC included in the contraceptive treatment norms of Ministries of Health in Ecuador and Honduras, and added as a regular part of the victims services programs of the justice departments of six Mexican states.

Depending on the country, private voluntary organizations (PVOs) provide between 10% - 80% of family planning services in Latin America. As international donor priorities shift to other countries, Latin American PVOs face the challenge of becoming more self-supporting. INOPAL III provided technical assistance to PVOs to improve their ability to conduct and use cost analysis, determine client willingness and ability to pay for family planning and other reproductive health services, and test strategies for setting fees and for generating income by offering for-profit services. The project worked with major PVOs in Ecuador, Mexico and Peru. In all three countries, profitable income generation strategies were identified, and agencies learned techniques for estimating costs and income for activities ranging from community based distribution programs to laboratory services and mini-pharmacies.

OVERVIEW OF THE INOPAL III PROJECT

INOPAL is the acronym for the Population Council's operations research project in Latin America and the Caribbean ("Investigación Operativa en Planificación Familiar y Salud Reproductiva para America Latina y el Caribe"). Its goal was to conduct operations research (OR) to improve the coverage, quality and sustainability of family planning and reproductive health services in the region. Operations research in family planning and reproductive health uses social science techniques to improve programs. It is distinguished from other social science research by its focus on factors under the control of program managers and policy makers.

INOPAL III was the successor to INOPAL I and INOPAL II (1984-1995). It was supported by a contract from the United States Agency for International Development (USAID) Office of Population between 1995-1998. In carrying out INOPAL III, the Population Council entered into a partnership with two sub-contractors, the International Center for Research on Women (ICRW) and Ipas. The specific objectives of INOPAL III were:

- To test the acceptability, cost-effectiveness and programmatic implications of linking other reproductive health services and family planning
- To increase access to a full range of family planning services and methods
- To develop strategies to reach special populations
- To improve the efficiency and financial sustainability of family planning programs
- To improve the quality of existing services
- To institutionalize the capabilities of program managers to use OR to solve service delivery problems

Reflecting the very high demand for operations research in Latin America, INOPAL III completed a total of 74 projects and technical assistance activities in ten countries between April, 1995 and September, 1998. **Table 1** shows the number of activities completed by country:

TABLE 1
INOPAL III OR AND TA PROJECTS BY COUNTRY

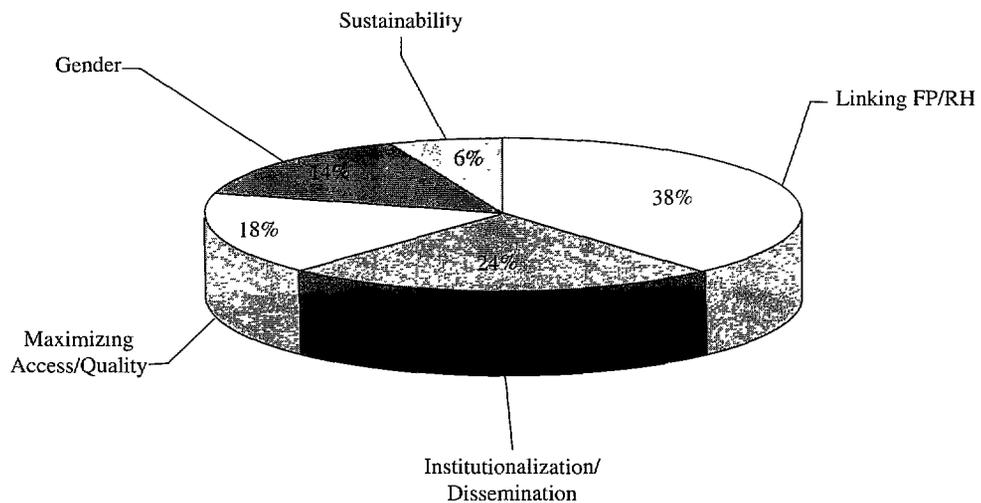
| Country | Number |
|--------------------|--------|
| Bolivia | 2 |
| Dominican Republic | 1 |
| Guatemala | 7 |
| Honduras | 12 |
| Nicaragua | 3 |
| Regional | 1 |
| TOTAL | 74 |

Working with public sector organizations was an INOPAL priority, and 48 of the 74 projects (65%) had one or more public sector participants. 49 of the projects were research studies, and the rest were divided between technical assistance, scaling-up of successful OR interventions, conferences, research training and dissemination of OR results.

Figure 1 shows distribution of INOPAL research/TA effort by expenditures. The pie chart shows the per-cent of sub-project funds spent on each of the following categories: (1) integration of family planning and other reproductive health services; (2) institutionalization and dissemination of OR; (3) maximizing access and quality; (4) gender and empowerment; and (5) sustainability.

In financial terms, the most important integration activities were the projects linking family planning and post-abortion care in Bolivia, Honduras, Mexico and Peru. The most important institutionalization and dissemination activities were projects with Peruvian universities to build the capacity of local institutions to conduct and use OR,

FIGURE 1
EXPENDITURES ON OR/TA SUB-PROJECTS BY ACTIVITY



and the publication of a variety of newsletters, summaries, books and working papers on OR topics. Most INOPAL projects attempting to increase access and quality focused on rural and indigenous populations and were conducted in Ecuador, Guatemala, Honduras, Mexico, Nicaragua and Peru. Gender and empowerment activities included a diagnostic to identify needed OR on gender issues as they relate to reproductive health services, and activities to increase the participation of men in family planning. Gender and empowerment projects were conducted in Ecuador, Honduras, Mexico and Peru. Most sustainability research consisted of cost analysis and the testing of price setting techniques. These studies were conducted in Ecuador, Honduras, Guatemala, Mexico and Peru.

The project had offices in Lima, Peru, Mexico City, Mexico, Tegucigalpa, Honduras and Washington D.C. and employed eight researchers, a dissemination specialist and support staff. INOPAL III also trained and supported a University of Michigan Population Fellow, a Michigan Summer Intern and three local fellows. Dissemination activities

included newsletters, conferences, handbooks, working papers, and a web site. INOPAL III also worked with service delivery organizations, universities and research institutes to develop their capacity to conduct and use operations research. INOPAL worked with three universities, Cayetano Heredia and The Catholic University in Peru and the National Autonomous University in Honduras.

In 1998, the INOPAL project was consolidated with two other USAID supported Population Council OR projects in Africa and Asia into a single global operations research project, FRONTIERS which is also administered by the Population Council. Final reports of INOPAL projects may be obtained by contacting the Population Council, 1 Dag Hammarskjold Plaza, NY, NY, 10017.

ASSESSING AND IMPROVING ACCESS AND QUALITY OF CARE

FEDERICO R. LEÓN

A problem of access occurs when there are no services for potential users or there are no users for existing services despite their need for them. A problem of quality of care occurs when current users do not or cannot receive satisfactory services. This chapter reviews INOPAL III studies of relevance to the problems of access and quality of care. The information was obtained from (a) subproject summaries contained in INOPAL III's Quarterly Performance Reports, (b) presentations at national or international meetings, (c) subproject substantive progress reports, (d) subproject substantive final reports, and (e) publications in the Working Papers series of INOPAL III/Population Council. All the final substantive reports of studies conducted in Peru were reviewed, as well as a fair number of publications or progress or final reports of studies conducted in Brazil, Bolivia, Ecuador, Mexico, Guatemala, and Honduras.

Access to Services

Access is defined as the availability of services to individuals or couples. Five types of barriers to access have been identified (Bertrand et al., undated).

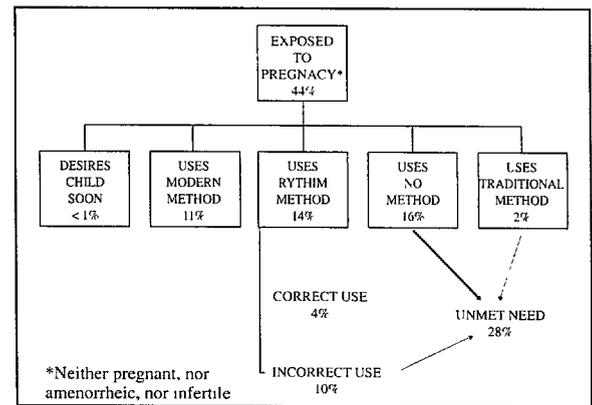
- Geographic or physical accessibility can be measured by the distance to reach a service delivery point (SDP) and the time required to arrive at it; density of SDPs within a specified geographic area can also be used as an indicator of physical access.
- Economic accessibility entails the extent to which the cost of obtaining the service is within the economic means of the individual or couple.
- Administrative accessibility refers to norms and regulations that may reduce access, such as clinic hours.
- Cognitive accessibility concerns the extent to which clients or potential clients are aware of the locations and specific services offered.
- Psycho-social accessibility encompasses attitudinal factors, including potential users' expectations of provider behavior and culturally conditioned attitudes.

Descriptive studies

Findings generated in survey research and qualitative studies have helped health programs assess the magnitude of the problem of access and identify a number of specific barriers.

Findings generated in survey research and qualitative studies have helped health programs assess the magnitude of the problem of access and identify a number of specific barriers

FIGURE 1
UNMET NEED FOR CONTRACEPTION IN
ACOBAMBA, HUANCVELICA, PERU



Unmet Need

Unmet need, i.e., the extent to which persons who need services are not receiving them, can be explained by a physical, economic, administrative, cognitive, or psycho-social barrier to access. Hence, the concepts of access and unmet need overlap and the latter may be treated as a proxy for access. In the family planning area, unmet need is defined as the percentage of married women (or women in union) in reproductive age (MWRA) who are in risk of pregnancy, do not desire to have children soon or ever and, yet, do not use contraception.

The unmet need for family planning was measured in the department of Huancavelica, in Peru's central highlands, to provide a baseline for future work by the PRIME project. A questionnaire was given to 1,293 women in reproductive age living in 24 small towns in the provinces of

Acobamba and Castrovirreyra (Altobelli, 1998). As shown in **Figure 1**, 28% of Acobamba MWRAs (or 63% of those exposed to pregnancy) had an unmet need for family planning. The figures in Castrovirreyra were, respectively, 32% and 47%. These are underestimates, for the unmet need of pregnant women was not counted.¹ In this study, cases of incorrect use of the rhythm method or use of traditional methods that are known to lack effectiveness (e.g., withdrawal) were classified as cases of unmet need. One of the recommendations made was to educate users of the rhythm method in the correct use of it, which could reduce unmet need at least by 30%.

In Mexico, the Institute of Social Security (Cabral et al., 1998) conducted a survey of 3,410 indigenous men and women, including nahuatl, otomí, mixteco, maya, tzeltal, and zapoteco ethnic groups. It was found that 46% of the young MWRAs declared intentions to avoid pregnancies, yet only 30% had used a method in the past or were using one presently. That is, unmet need was shown to be greater than 35% in this group.

In the family planning area, unmet need is defined as the percentage of married women (or women in union) in reproductive age (MWRA) who are in risk of pregnancy, do not desire to have children soon or ever and, yet, do not use contraception

Availability of Services

Findings from Situation Analysis studies are relevant to the question of physical access, especially when the SDPs studied are the sole providers in a geographic area. In 1993, the State Health Secretariat of Ceará, Brazil conducted a Situation Analysis study throughout the state. A second round of Situation Analysis was completed in 1997 in the same municipalities of the city of Fortaleza and the heavily rural interior visited four years earlier (Noble et al., 1998d). In this study, SDP managers were asked about the availability of family planning, gynecological, prenatal, and STD services at their facility. **Table 1** offers data concerning the SDPs that offered them at least one half-day per week. The percentage of SDPs offering family planning services increased in Fortaleza but remained constant in the interior. No substantial changes were observed in gynecological or prenatal care, but STD services increased globally from 14% to 21%. If only 30% of the thinly scattered facilities of the Ceara interior offer family planning, the population can be expected to have a rather limited physical access to such services.²

In the Libertadores-Wari region of Peru, 47% of 17 hospitals of the Ministry of Health encompassed in a Situation Analysis study offered detection of STD/AIDS, yet none of the 46 health centers nor 131 health posts visited in the same study offered these services (Li & Gárate, 1996). In rural Huancavelica, which is part of Libertadores-Wari, Noble (1997) found that only 10 of 25 sparsely distributed SDPs reported offering Papanicolaou smears for analysis at a regional hospital.

Economic Barriers

Feminist groups have complained that service prices charged by Peru's Ministry of Health function as barriers to access to reproductive health services in rural areas (Galdos, 1998). Survey responses of rural Huancavelican women about causes of service underutilization suggest that cost is less important than other factors; less than 10% of their spontaneous responses indicated that services had not been requested because they cost too much (Altobelli, 1998). However, in economic matters verbal reports may hide the real attitude.³

TABLE 1
PERCENTAGE OF SDPS OFFERING REPRODUCTIVE HEALTH SERVICES, CEARÁ, BRAZIL

| | Fortaleza N = 118 | | Interior N = 112 | |
|-----------------|----------------------|------|---------------------|------|
| | 1993 | 1997 | 1993 | 1997 |
| Family Planning | 41 | 65 | 31 | 30 |
| Prenatal Care | 93 | 86 | 66 | 76 |

The services may be there and may be economically accessible but the public may be unaware of them or the public may be aware of the services offered but not of their need for them

In Ecuador, APROFE found that 10% of users of clinic services considered prices to be too high. The price of an IUD insertion was equivalent to 1 to 11% of the clients' monthly income, depending on the city (Marangoni & Cuesta, 1998).

Cognitive Barriers

The services may be there and may be economically accessible but the public may be unaware of them. The Peruvian IPPF-affiliate, INPPARES, whose Patres clinic in Lima is well known for its family planning services, expanded them to other aspects of reproductive health in 1995. Nevertheless, when clients were asked in 1996 to name new services they would like to see the clinic offer, 34% mentioned treatment of STDs, cancer screening, prenatal control and other reproductive health services already offered by the clinic (Velásquez et al., 1996).

The public may be aware of the services offered but not of their need for them. There are family planning clients who do not know that they have an STD. INPPARES has assessed the use of self-administered questionnaires to estimate the prevalence of high-risk sexual behavior and reproductive tract infections among its client population (Noble et al. 1998c).

Cognitive barriers to access also encompass danger signs during pregnancy

Similar is the case of maternal services. Huancavelican women participate in prenatal care mainly to obtain food supplements, and only 2% of births in Acobamba and 15% in Castrovirreyna took place in an SDP in 1996. When the indicator of "birth attended by health personnel" is used, the numbers increase to 8% and 45%, respectively. The major reason cited for not submitting to prenatal care and not delivering with institutional assistance was that it is not considered necessary, i.e., women did not recognize the need for such services (Altobelli, 1998). A parallel qualitative study in rural Huancavelica (Valverde & Gonzales, 1997) confirmed these findings and revealed that pregnant women of the countryside do not perceive the need for special care: they perform the same social and productive roles as ever, driving their animals, climbing hills, etc. If they are healthy, why should they go to a health facility?

Cognitive barriers to access also encompass danger signs during pregnancy. Eclampsia is reported to be the main cause of maternal mortality in Puno. Yet, headaches and pain in the stomach were spontaneously mentioned only by 55-63% of a sample of pregnant women and significant others (husbands, neighbors, etc.) when they were asked about danger signs in pregnancy. Furthermore, only 32-27% said that these symptoms required a visit to an SDP, 00-13% associated them with possible maternal death, and a majority thought they were caused by psychological problems-physical effort. As few as 4% mentioned fever and vaginal liquid loss as danger signs, and no one mentioned immotile fetus, tinnitus, or convulsions,

whereas 39% mentioned frequent nausea, 26% hemorrhage, and 17% swelling (Gordillo et al., 1998).

Finally, several studies have found that fear of side effects of modern contraceptives play a disproportionately important role among the barriers to access to family planning in rural Huancavelica (Altobelli, 1998; Valverde & Gonzales, 1997) as well as in other rural areas of Peru (Tapia, 1998). Beliefs that use of the injectable increases blood volume in the brain and IUDs cause cancer are widespread in these areas.⁴ Men of rural areas of Peru's highlands share this fear of modern contraception (Salazar & Cobián, 1998; Tapia, 1998).

Psycho-Social Barriers: Women

To Bongaarts and Bruce (1995), the key question from the client perspective is "Access to what?". SDPs may be there and may offer services perceived as needed, yet these may be inconsistent with women's expectations. According to Valverde and Gonzales (1997), Huancavelican women say that the woman in labor prior to delivery must keep warm; delivery is an essentially private act shared with one attendant, generally the husband, and performed in vertical position; no one else needs to watch her genitals; disposition of the placenta is part of a family ritual and remaining close to the family in the immediate postpartum period provides security. In contrast, institutional delivery is associated with cold environments, requires a horizontal position, and violates privacy. Altobelli (1998) reported that the second most frequently cited reason for avoiding SDP services was the women's fear of

having to expose their bodies to a male provider. Additionally, hospitals and health centers do not give the placenta to the family and permanent visits during the immediate postpartum are generally forbidden. Furthermore, some of the women surveyed complained of rude treatment on the part of service providers. They were afraid of being shouted at and treated disrespectfully at SDPs, and this represented an important subjective barrier to access.⁵

SDPs may be there and may offer services perceived as needed, yet these may be inconsistent with women's expectations

Bramon et al. (1998) assessed the presence/absence of desired delivery elements in four health centers of Huancavelica according to postpartum women who had given birth there and according to health staff. Both indicated that the major deficiencies pertained to room temperature and option of vertical birthing position. On the other hand, women and staff diverged in their perception of illumination and number of vaginal exams. The staff thought the number of manual examinations was appropriate but the women considered them to be excessive.

Very few men accede to these services or accompany their spouses in visits to SDPs. The men said they did not request family planning services because the public health system excluded them and SDPs symbolized spaces reserved for the weak and vulnerable in society, such as the elderly, children, and women

Psycho-Social Barriers: Men

SDPs within the coastal city of Chimbote, Peru, offer vasectomy and condoms (Noble & Solís, 1997). Yet, very few men accede to these services or accompany their spouses in visits to SDPs. Cobián and Reyes (1998) provided an explanation for this absence on the basis of eight focus groups conducted with Chimbotean men aged 20-38. The men said they did not request family planning services because the public health system excluded them and SDPs symbolized spaces reserved for the weak and vulnerable in society, such as the elderly, children, and women. They viewed the services as being designed mainly for women. The fact that almost all providers in charge of counseling were female added fear and insecurity. The working hours of the SDPs, and the providers' use of the wife as a communication channel to them instead of approaching them directly, confirmed their belief that the health system did not address male adults. The investigators recommended that, to attract men, a number of changes were needed in their promotional strategy (e.g., incorporating men in IEC functions).

Results of a parallel series of focus groups with Chimbotean women (Salazar & Rivero, 1997) were consistent with the findings of the men's study. Women said the strategy to bring men and women as couples to SDPs was condemned to failure. In their view, the few men who accompanied their spouses felt uncomfortable, behaved passively, and contributed nothing in the consultation.

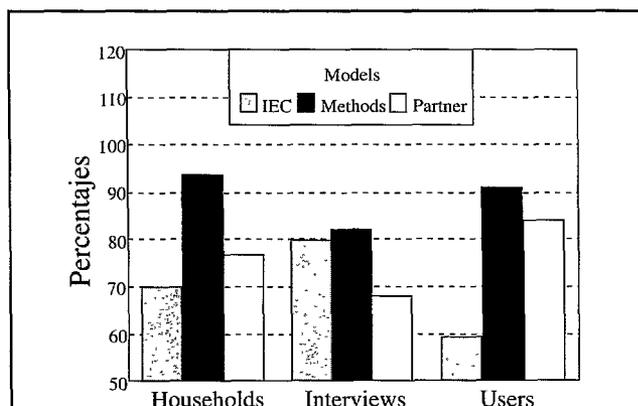
Interventions to increase access

INOPAL III intervention studies have addressed physical, economic, and cognitive accessibility problems.

Increasing Physical Access

In order to reduce the unmet need for family planning in an urban district of Ayacucho, Peru, Quispe et al. (1998) brought the services to women's homes. Households that according to a previous census contained MWRAs were grouped into 60 clusters and randomly assigned to three models of home visits. Nurse-midwives performing their internship at the Ayacucho Referral Hospital either (a) provided IEC to visited women, (b) counseled women with help of an algorithmic job aid and provided barrier and hormonal methods on site, or (c) implemented alternative b for the woman and her partner. A follow-up survey conducted one month later showed the method-on-site model to be more successful than the others (see Graph 1). First, it caused a greater motivation among the interns to perform the visit; while those assigned to this model found 94% of the

GRAPH 1
RESULTS OF THREE MODELS OF HOME VISIT IN AYACUCHO, PERU



households assigned, the interns in the IEC and partner models only found 70% and 77%, respectively (from 1,808 households assigned, $p < .00$). Second, interns assigned to the method-on-site model achieved more interviews with women (from 1,454 women found, $p < .00$) and enrolled more of them as users of contraception (from 291 with unmet need, $p < .05$).⁶

A follow-up survey conducted one year later (Pecho et al., 1998) confirmed the superior performance of the method-on-site model but also showed that the achievements had receded substantially and unmet need was again prevalent. The losses were attributed to several factors. First, the home visit was not reinforced by subsequent visits; women were left without resupply and, thus, most of them regressed to their prior status. Second, an aggressive nationwide campaign against modern contraceptives reduced demand for family planning services at SDPs of the Ministry of Health throughout Peru (Parra, 1998). Women with a weak motivation to use contraceptives may have been particularly vulnerable to this campaign.⁷ Finally, false intern reports of successful home visits were revealed. In order to become sustainable, any intern-based model of home visits will have to take into account the weak motivation of their targets, provide them with continuous resupply, and exert stronger control over the field activities of the interns.

Changing Prices of Services

Several intervention studies have assessed the cost of alternative strategies of service provision for programs (e.g., Brambila et al., 1998) and one of them reduced the cost of postabortion care for program and

clients (Benson et al., 1998), implying that a reduction of an economic barrier was achieved.

On the other hand, CEMOPLAF set price increases from 17% to 54% in three groups of clinics in Ecuador and found an inelastic demand for gynecological services, IUD revisits, and prenatal care (Vargas et al., 1998). It must be noted, however, that the intervention was successful economically, yet losses of clients occurred (20-32% for gynecological visits, 6-14% for IUD revisits, 8-17% for prenatal care) and were correlated with the amount of price increase (ordinal $r_s = -1.00, -.50, \text{ and } -1.00$, computed from average changes by the author of this chapter). That is, the price raises functioned as barriers to access. The increased clinic income compensated for the reduction in number of clients economically, not in terms of access granted.

Increasing Cognitive Access

Diverse strategies have been implemented to diminish cognitive barriers to access. In Mexico, MEXFAM installed interactive touch screen kiosks in malls near its clinics. The information offered by the kiosks was expected to increase the number of clients using clinic services. During a 3-month period, 1,799 persons used the kiosks; however, only 114 new users were identified as referrals from them, and clinic managers concluded this was not a good strategy to recruit clients (Munguía & Vernon, 1998).

In order to reduce the unmet need for family planning in an urban district of Ayacucho, Peru, the services were offered at women's homes

TABLE 2
ORDERED MEAN NUMBER OF SERVICES PURCHASED ON THE FIRST VISIT, BY CLIENT
COHORT AND TREATMENT GROUP, INPPARES PATRES CLINIC, LIMA, PERU, 1997

| Rank | Services Purchased | Cohort | Treatment Group |
|------|--------------------|--------------------|-----------------|
| 1 | 2.06 | Tuesday, Nov. 4 | IEC |
| 3 | 1.909 | Thursday, Nov. 6 | IEC |
| 5 | 1.821 | Monday, Oct. 20 | IEC |
| 7 | 1.788 | Monday, Nov. 3 | IEC |
| 9 | 1.696 | Wednesday, Oct. 29 | IEC |
| 11 | 1.579 | Monday, Oct. 27 | Control |
| 13 | 1.552 | Thursday, Oct. 30 | Control |
| 15.5 | 1.500 | Tuesday, Oct. 21 | Control |
| 17 | 1.467 | Friday, Oct. 24 | IEC |
| 18.5 | 1.458 | Wednesday, Oct. 22 | Control |

In Peru INPPARES, realizing that many clients were unaware of its reproductive health infrastructure, developed an interactive pamphlet that asked questions about the client's health and informed her about the various services available at its Patres clinic in Lima. In a study conducted to evaluate the impact of the pamphlet on client behavior,

20 calendar days were randomly assigned to the IEC condition or a control condition, and daily cohorts of new clients were used as units of analysis. Group equivalence was confirmed with respect to key variables. As shown on Table 2, the number of services purchased on the day of the first visit was higher in intervention than control days ($p < .01$). A similar relationship was registered in a follow-up period encompassing the next 30 days ($p < .02$). That is, the intervention succeeded in increasing cognitive access to services (Velásquez et al., 1998).

In rural Honduras, CARE developed IEC materials concerning family planning and reproductive health and its promoters distributed them among men who were participating in a Community Agroforestry Project. Surveys conducted before and after the intervention showed substantial changes in knowledge, attitudes, and practices (KAP) among men as well as among women (Foreit et al., 1998). Table 3 shows selected findings.

Indigenous populations have been the subject of interventions designed to increase cognitive access to services. Language is one of the main barriers to access among these populations. In isolated rural communities of Vilcashuamán, Peru,

TABLE 3
SELECTED KAP PERCENTAGES BEFORE
AND AFTER CARE INTERVENTION, HONDURAS

| Survey Contents: | Knowledge of STD Symptoms: Ache at Urinating | | Attitude: Talked to Spouse about Contraception | | Behavior: Uses Contraception | |
|------------------|--|----------|--|----------|------------------------------|----------|
| | Pretest | Posttest | Pretest | Posttest | Pretest | Posttest |
| Survey Targets | | | | | | |
| Women | 8.7 | 9.7 | 36.2 | 45.8 | 36.7 | 55.0* |

* $p < .05$

93% of the population had Quechua as their mother tongue, and only 43% of the women know how to read. Taped IEC dialogues were tested for their capacity to improve community knowledge of essential health concepts in workshops that were entirely conducted in Quechua (Chito) or Spanish (Chanin). Family planning knowledge was significantly increased in the experimental community (see Table 4, from Tutaya et al., 1998).

The contraceptive prevalence rate of married participants increased by at least three percentage points after the course, and this was attributed to increases in the use of modern methods (see Graph 2).

In rural Honduras, an intervention provided effective segmentation tools to community volunteers to improve their capacity to detect cases and make referrals to clinics. Save the Children devised a Community List for the Non-Pregnant

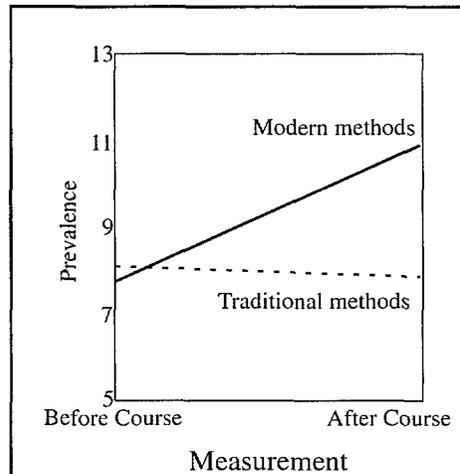
TABLE 4
AVERAGE KNOWLEDGE SCORES BEFORE AND AFTER WORKSHOPS, VILCASHUAMÁN, PERU

| Knowledge Content: | Reproductive Risk | | Danger Signs During Pregnancy | | Family Planning | |
|--------------------|-------------------|----------|-------------------------------|----------|-----------------|----------|
| | Pretest | Posttest | Pretest | Posttest | Pretest | Posttest |
| Community | | | | | | |
| Control (Chanin) | 4.47 | 4.56 | 4.03 | 4.16 | 3.63 | 3.97 |

*p < .05

GRAPH 2

WOMEN'S CONTRACEPTIVE USE BEFORE AND AFTER COURSE, PER METHOD TYPE, GUATEMALA



Other strategies have focused on providers of IEC as well as on potential users. In Guatemala, AGES conducted a project in which teachers of the National Bilingual Education Program taught reproductive health courses in indigenous communities, in indigenous languages (Cospín & Vernon, 1998). A total of 496 courses for 11,171 adult students were taught by 55 teachers in a seven month period. Supervision visits revealed that 92% of the teachers were "very" satisfied with the experience and 71% of the students had a "very" positive attitude toward the courses. Of the students who were in union, 86% reported to have talked about the course with his/her partner, and 68% said they had found increased support from their partner concerning family planning.

Woman (known as "Listado") which classifies women according to their reproductive risk and need for reproductive health services (family planning, tetanus toxoid, citology, etc.). An experiment was

FIGURE 2
VOLUNTEER'S COMPETENCE TO MAKE REFERRALS
IN SIMULATED SITUATIONS, HONDURAS

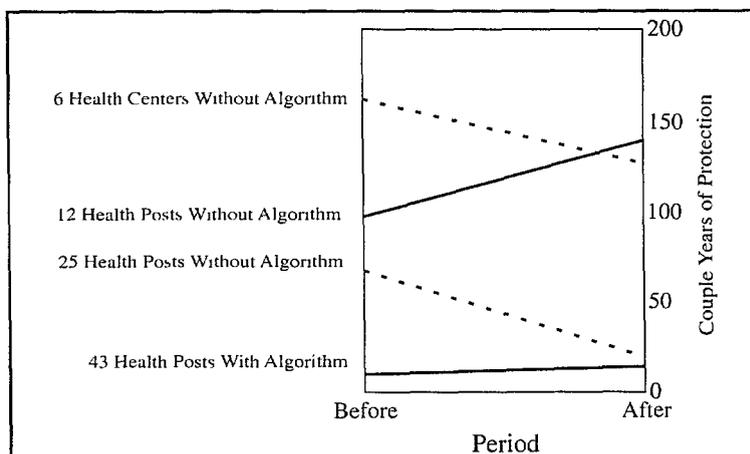
| Real Problem | Referral | |
|--------------|----------|-----|
| | NO | YES |
| YES | 7% | 43% |
| NO | 42% | 8% |

conducted to evaluate the use of the Listado by the volunteers. Twelve scripts were enacted by simulated clients and the volunteer's decision to make a referral was appraised. Few of the volunteers' decisions were misses or false alarms in these simulations (see Figure 2). Additionally, a coupon was designed to implement referrals. Volunteers visited 1,186 women in a 4-month period and referred most of these cases. The effective referral rate was 33% (Améndola et al., 1996).

Finally, Vernon and Ottolenghi (1996) designed an algorithmic job aid to help Guatemalan providers offer reproductive health and family planning services

systematically. ALGOSSISAR formulates seven questions to determine which services are needed by a given woman. Guatemala's Ministry of Public Health and Social Welfare tested its effects on service delivery and outcomes. Twelve health districts of the departments of Quetzaltenango and San Marcos that included 12 health centers and 43 health posts were randomly assigned to receive the algorithm and 6 districts including 6 health centers and 25 health posts remained as controls. Personnel from all these SDPs (N = 192) received courses in contraception and counseling and those in the experimental group were additionally trained in the use of the job aid. Exit interviews with users after the intervention only detected a few socio-demographic differences between experimental and control-group women. Interviews with providers suggested that the use of the job aid had been partial and unsystematic,⁸ and SDPs' service statistics for the periods April-December 1995 (before the intervention) and April-December 1996 (after the intervention) showed similar outputs regarding prenatal and postnatal care (Vernon et al., 1998a). Nevertheless, contraceptive couple-years of protection (CYP) given to new clients increased in the experimental group (while it decreased in the control group; see Graph 3). Guatemala's MOH decided to distribute the job aid at national level.

GRAPH 3
COUPLE-YEARS OF PROTECTION GIVEN TO NEW CLIENTS BEFORE AND AFTER
THE INTERVENTION, PER TREATMENT GROUP, GUATEMALA



1. Unmet Need. The unmet need for family planning has been explicitly or implicitly used in Peru and Mexico as

a proxy for access in descriptive studies, and an intervention in Peru (Ayacucho) had unmet need as a dependent variable. The reduction of unmet need is an essential outcome of the interventions designed to increase access and should be used more frequently in OR.

2. Physical Access. Situation Analysis studies in Brazil and Peru have yielded findings that are relevant to the problem of geographic or physical access. In Ceará (and Bahia), Brazil, positive changes in service availability took place from 1993 to 1997 (or from 1994 to 1998). In Peru (Ayacucho), an intervention showed that home visits implemented by nurse-midwife interns using an algorithmic counseling instrument and carrying hormonal and barrier methods can be effective in reducing unmet need for contraception. Yet the sustainability of this approach remains in doubt. A wider range of strategies to increase physical access must be formulated and tested.
3. Economic Access. Survey results in Peru (Huancavelica) and Ecuador (APROFE) are relevant to this topic. Interventions have achieved reductions of the cost of postabortion services for programs (Mexico) and for programs and users (Peru). However, cost reductions may be irrelevant to access if economic barriers are merely hypothetical. To demonstrate effects on economic access, future studies ought to formulate the problem from the user's perspective. On the other hand,

Vargas et al. (1998) demonstrated that demand for several reproductive health services was inelastic, yet CEMOPLAF lost users systematically as a consequence of the price increases. The appropriate indicator of price effects on access is demand sensibility, i.e., the variance in changed number of users that is attributable to changes in prices.

4. Cognitive Access. This is the only area in which a satisfactory balance between descriptive and intervention studies and between process and outcome variables has been accomplished. Potential clients' lack of awareness of gynecological and maternal services and/or their need for them, and extensive fears of contraceptives' side effects have been revealed. Interventions have addressed intermediate results (v.g., improved knowledge in Peru and Honduras, use of a job aid in Guatemala) as well as program outcomes (v.g., service utilization in Mexico, Peru, and Honduras; prevalence in Guatemala and Honduras; CYPs in Guatemala). The link between descriptive studies and interventions, however, could be strengthened.
5. Psycho-Social Access. Contrasts between potential clients' expectations and the reality of services (women's preference for traditional practices, men's identity problems) have been described. Interventions, however, are conspicuously absent in this area. Innovative solutions to reduce psychosocial barriers to access must be formulated and tested.

Quality of Care

To clearly differentiate quality of care from access, this chapter defines quality in terms of the characteristics of intramural services

provider relations, follow-up mechanisms, and constellation of services.

Three factors should be considered in the analysis of quality of care studies: phases, dimensions, and subjects

offered by SDPs to persons who come for them. Three factors should be considered in the analysis of quality of care studies: phases, dimensions, and subjects.

- The subject factor responds to a need to differentiate between the main protagonists. Programs represent the institutional sphere and its management, providers are the individual persons who deliver services; clients encompass current users as well as potential users of services.

Phases are the structure, process, and outcomes of service delivery

program or SDP to deliver services. The process of service delivery is the actual moment in which the client receives the service from a provider. Outcomes entail expected or real results of services for programs, clients, or other interested parties.

The factorial crossing of Phases x Subjects generates a nine-cell Quality of Care Grid. Bruce's (1990) quality of care dimensions (choice, etc.) can be examined within each of these cells. Alternatively, Dimensions can be factorially crossed with Phases and Subjects to yield a 54-cell three-dimensional analytical model.

Descriptive studies

Survey questionnaires and qualitative studies have generated information concerning eight of the nine cells of the Quality of Care Grid (see Figure 3).

Program Preparedness

Structure has been assessed at the program level by means of Situation Analysis. Table 5 offers data from four studies pertaining

- Dimensions have been defined with respect to family planning (Bruce, 1990) but they apply to other reproductive health services (maternal, gynecological) as well. They include choice of method, client-provider information exchange, provider technical competence, client-

FIGURE 3
AREAS ENCOMPASSED BY QUALITY OF CARE DESCRIPTIONS, INOPAL III

| | PREPARATION | DELIVERY | OUTCOME |
|---------|-------------|----------|---------|
| PROGRAM | X | X | X |
| PROVIDE | X | X | X |
| CLIENT | X | X | X |

Dimensions include choice of method, client-provider information exchange, provider technical competence, client-provider relations, follow-up mechanisms, and constellation of services

to SDP preparedness to deliver specific contraceptives.⁹ Preparedness is achieved when the SDP has the personnel, equipment, supplies, and infrastructure required to provide the minimally acceptable quality of care, and is relevant to the concept of client method choice (Bruce, 1990). The results of the studies indicated that the weakest link in SDP preparation is the logistic system. Choice of family planning method is restricted by a lack of contraceptives on site; insufficient stock of slides, spatulas, and acetic acid limit the quality of gynecological services; and stockouts of iron supplements and tetanus toxoids limit prenatal program readiness. Both in Brazil and Peru SDPs are better prepared to deliver prenatal care than gynecological services. For example, in rural Huancavelica, 10 out of 25 SDPs claimed to offer Papanicolaou smears for analysis at a regional hospital but only 3 were really prepared to perform them.¹⁰

The capability of an SDP to effectively promote services also is affected by the availability of relevant IEC materials. In Ceará, the percentage of SDPs with stocks of pamphlets or a flipchart increased from

Subject factor includes programs (institutional sphere and its management), providers, and clients (current users as well as potential users)

1993 to 1997, both in Fortaleza and the interior, in all the service areas: family planning, cervical/breast cancer prevention, prenatal care, and

Supervisory visits to SDPs are key elements of program preparedness. In the Ceará study, a visit was considered minimally adequate if at least three of the following five activities were performed: service delivery is observed; questions are asked about problems in SDP functioning; suggestions are made to resolve problems; clinic records are examined; and praise is given for improvements. In Ceará, adequacy of supervisory visits increased from 16% in 1993 to 37% in 1997 in Fortaleza, and from 5% to 27% in the interior (Noble et al., 1998d).

Provider Preparedness

Córdova (1998) found that manual vacuum aspiration (MVA) for the treatment of incomplete abortion would be acceptable to clinical health care professionals surveyed

TABLE 5
PERCENTAGE OF SDPS PREPARED TO DELIVER
SPECIFIC CONTRACEPTIVES, BRAZIL AND PERU

| Location, Number of SDPs and Source | Spermicide | Condom | Pill | Injectable | IUD |
|---|------------|--------|------|------------|-----|
| Ceará, 1997 (230) Noble et al. (1998d) | 11 | 20 | 36 | 7 | 18 |
| Santa (39) Noble & Solís (1997) | 49* | 49* | 77 | 59 | 38 |

* Noble and Solís (1997) only reported for barrier methods (i.e., spermicide plus condoms).

in Bolivia, though their facilities lacked this technology.

Gárate and Cáceres (1997) studied the preparedness of individual providers to exchange technical information with clients during counseling. They gave the Test of Family Planning Knowledge (León, 1994) to 19 physicians, 40 nurse-midwives, and 14 health technicians of 39 public SDPs in the coastal province of Santa, Peru. Generally, providers were better informed about human reproduction than contraceptive technology. Professional personnel obtained significantly higher scores than non-professional workers.

Valverde and Gonzales (1997) reported that service providers in rural Huancavelica had negative perceptions of community women; they viewed them as being overly ignorant, unreliable, distrustful, apprehensive, and shy. Most of them did not appreciate women's culture. The researchers recommended the Ministry of Health to hire local personnel, instead of recruiting most of them in Lima or coastal areas, to diminish the interpersonal and cross-cultural tensions.

Providers may not be prepared to deliver services for men. In Ceará they were asked whether they would consider tubal ligation or vasectomy to be the better method for a couple wanting a permanent form of contraception and without contraindications to either procedure. Sixty-two percent of providers named vasectomy as the better method. However, less than one-fourth of family planning providers reported that they recommended vasectomy on a regular basis (Noble et al., 1998d).

Client Preparedness

Preparedness has also been studied at the client level. In Ceará, family planning clients who visit SDPs for method re-supply

increased from 56% in 1993 to 72% in 1997 (Noble et al., 1998d). Salazar and Rivero (1997) found in eight focus groups in Santa that women who seek family planning services go to SDPs with a need for information on the bodily effects of contraceptives and a pre-decision of method choice based on information obtained from relatives and friends. There is also evidence of growing partner support of contraceptive use among family planning clients in Ceará: in 1993, 51 percent of family planning clients reported that their partner would support use of any contraceptive method, compared with 65 percent of respondents in 1997 (Noble et al., 1998d).

In Peru, the ReproSalud project of the feminist organization Manuela Ramos used a modified focus group technique ("autodiagnóstico", developed by the Warmi project in Bolivia) to identify the reproductive health problems of concern to rural women (Gárate et al., 1997). Auto-diagnósticos were carried out in about six 3-hour sessions with 20 to 30 members of grass-roots organizations. These not only comprised oral reflections and open discussions on their own lives as women but also self-expressive activities such as drawings and role-playing. A total of 17 were undertaken in 1996 in six regions of Peru. One of the most frequently mentioned problems was that of a milky-white vaginal discharge having foul smell and accompanied with itching and burning of the genitalia, called "regla blanca" or white menstruation. Ten of the 17 organizations prioritized this problem on the basis of its frequency and severity. The women viewed regla blanca as the initial symptom of a chronic disease producing later vaginal discharges of other colors and odors that leads to cancer and

death. Although some women may be attributing illness to cervical mucus that normally exists during the menstrual cycle, preliminary laboratory tests carried out at the University of Washington have detected a high prevalence of bacterial vaginosis and cervicitis (Feringa, 1998).

Delivery Process: Focus on Program

Mexico's Institute of Social Security (IMSS, 1998) reported that hospital managers recognized the existence of program's contraceptive method targets but said they were in favor of informed choice by users. Nevertheless, they were apprehensive that the use of informed consent forms could delay service provision.

Programs are responsible for the amount of time clients have to wait at an SDP until they receive the services. In Ceará, 46% of the clients of reproductive health services in 1993 and 38% in 1997 reported that they had waited more than two hours to be seen by the provider. Waiting times between one and two hours were reported by 28% and 22%, respectively (Noble et al., 1998d). Only 26% in 1993 and 40% in 1997 had to wait less than one hour. Improvements in service organization are still required to reduce waiting time in Ceará,

Noble and Solís (1997) studied the supervision of service delivery, a program function, in the province of Santa, Peru. Providers reported that, in their supervisory visits, managers prioritized the process of communication with the community but gave even more emphasis to the achievement of contraceptive method targets, especially sterilizations. Also in Santa, Ramos and Wong (1997) found that providers complained of a management emphasis on

sterilization targets that constrained the time they were able to dedicate to users of reversible contraceptives.

Using the Test of Family Planning Knowledge and the Service Test based on simulated clients (León et al., 1994), Haiti's Institute Haitien de Sante Commaunataire (1996) found that promoters were inventing clients. Such promoters were dismissed, and the Institute established as standard practice to test promoter performance.

Delivery Process: Focus on Providers

Referring to the treatment of cases of regla blanca at Peruvian SDPs, Gárate et al. (1997) talked about a "culture of deafness", in which women yearn to express their fears and providers do not pay attention; the women often felt that they had not been taken seriously by providers. In Puno (Valdivia et al., 1998) and Ayacucho (Rivera et al., 1998) focus groups with users of family planning services at hospitals elicited diverse complaints from women concerning the limited provider time available, the lack of information given to the user, and the rude treatment received. In the obstetric and gynecology ward of Carrión Hospital in the port of Callao, Peru dramatic interpersonal tensions have been reported between postabortion patients and health staff on the basis of in-depth interviews. It appeared that most providers thought the women had induced their abortions and must be penalized; consequently, they delayed care and treated the women rudely (Gárate & Aliaga, 1998). In contrast with these negative reports are the focus groups conducted by Salazar and Rivero (1997) in Santa in which the women evaluated

positively the interpersonal relations with providers.

In Mexico, service providers in hospitals of the IMSS (1998) were reported to be in favor of informed consent, yet 45% of them said it was not sought before contraceptive provision. On the other hand, exit interviews with prenatal clients revealed that in 90% of the cases the providers had let the client select the contraceptive method and 70% of the clients had signed informed consent forms. Exit-interviews with postpartum women revealed that 72% recognized the consent form and said they had signed it.

Data from *autodiagnósticos*, focus groups, in-depth interviews, and survey questionnaires have been complemented with behavioral observations registered on checklists. According to observers working in 1997 in Ceará, providers of the interior showed good interpersonal skills more frequently than those of Fortaleza, in family planning consultations as well as in prenatal care and with gynecology clients. The interpersonal skills of providers were considered satisfactory if the following three conditions were met: if the client was greeted courteously, if privacy was maintained during the consultation, and if the client was asked whether she had any doubts or questions. Providers' exchange of information with new family planning users referred fundamentally to last menstrual period, past use of contraception, and how to use the method. Side effects of methods were addressed in less than 10% of the exchanges (Noble et al., 1998d).

Cáceres and Villanueva (1997) used both observers and simulated clients to learn about provider behavior during service

delivery in Santa. Despite the pressure on method targets, providers did not bias counseling in favor of sterilization. However, they performed inequally the diverse aspects of counseling, showing dedication to instruct clients on method use but not exhaustiveness in screening for contraindications or advising about side effects. For example, providers did not screen for contraindications with a simulated client enacting the profile of a woman who had been using self-prescribed pills for one year. Scant or no attention was paid to partner relations or STDs. For example, a simulated client enacting the profile of a woman who had a promiscuous husband and a history of STDs and wanted to use the IUD was not asked about either the husband or STDs. When Santa providers were asked about factors that limit counseling, they referred to time constraints, lack of IEC materials, lack of refresher training, memory gaps during the consultation, and fear of losing the client if the information frightens her (Ramos & Wong, 1997).

Delivery Process: Focus on Clients

At Santa SDPs, users were not satisfied with the information given by providers and felt that counseling was not being responsive to their individuality (Salazar & Rivero, 1997). Results of client exit interviews were consistent with these findings. They showed that many clients lacked information concerning essential details of the method chosen, such as what to do if one forgets to take the pill once, and only 15% of them received educational materials that could be used at home (Salazar & Llamamango, 1997).

Outcomes

Family planning programs may develop activities for years without evaluating important results. This is the case of contraceptive continuation. While management information systems register acceptors of contraception on an on-going basis, assessment of the continuation in the use of family planning requires special surveys.

In Peru, clinical records of women who had initiated use of the pill, injectable or IUD in 1995 were obtained from hospitals, health centers, and health posts of the La Caleta and Guzmán Barrón health systems of the province of Santa, and the women were visited at their homes and asked to participate in individual interviews (Noble et al., 1998d). The 12-month discontinuation rate of family planning while still needing it (including method failure) was 14.7 in La Caleta and 18.5 in Guzmán Barrón. Similar surveys were conducted in Puno (Valdivia et al., 1998), where pill use was trivial, and Ayacucho (Rivera et al., 1998), where IUD use was very low (see Graph 4).

In the four studies, failure to reach targetted households and/or to interview targetted women caused sample attrition.¹¹ This and the high educational level of the women interviewed suggest that the effective samples may have been biased and that the discontinuation rates may have been underestimated. The reliable findings of the studies are that (a) the greatest part of method discontinuation is accounted for by method shifting; (b) the IUD undergoes less abandonment than the other reversible methods; (c) discontinuation of the pill is greater than abandonment of the

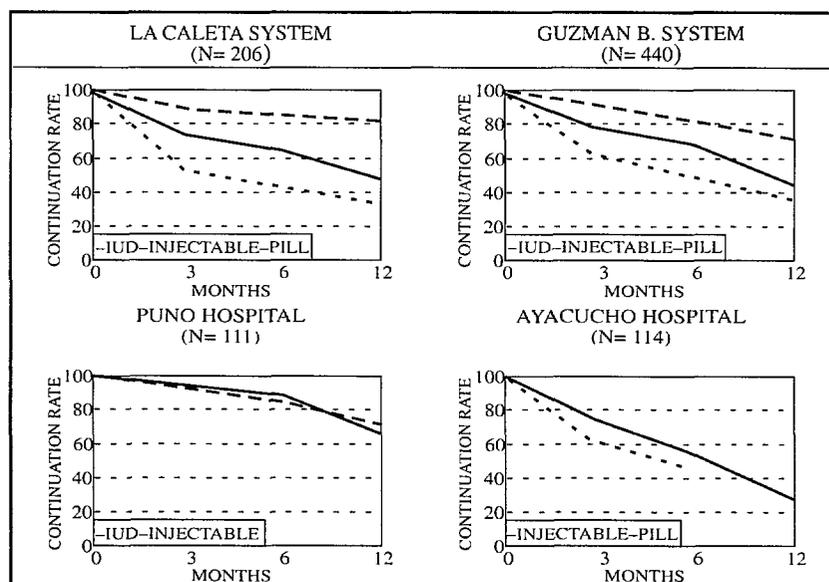
injectable; and (d) by far, the main stated reason for discontinuation is side effects of method use. In a qualitative study of 36 women who discontinued use of Depo-Provera, weight gain and headaches were the main stated reasons for discontinuation (Gárate & De la Peña, 1996).

Quality of Care Descriptions: Summary, Conclusions, and Recommendations

1. Scope of Services. Descriptive studies have addressed diverse aspects of the quality of care of family planning services. Maternal services (including prenatal care, danger signs during pregnancy, and birthing services) have also been encompassed, as well as gynecological services (STDs from the

Descriptive studies have addressed diverse aspects of the quality of care of family planning services, maternal services as well as gynecological services

GRAPH 4
CONTINUATION RATES FROM FOUR FOLLOW-UP STUDIES, PERU



Program preparedness has been systematically assessed in Brazil and Peru. The technical knowledge of the provider, his/her vision of clients, and his/her attitudes toward services for men have been explored

provider and user perspectives and cancer from the user perspective).

2. Preparedness. Program preparedness has been systematically assessed in Brazil (Ceara, Bahia) and Peru (Libertadores-Wari, Santa, Huancavelica). The technical knowledge of the provider, his/her vision of clients, and his/her attitudes toward services for men have been explored.

Waiting time and use of informed consent forms have been described in Brazil and Mexico. Studies in Peru and Brazil have supplied observations about the supervision process and limitations of information exchange between provider and users

Client preparedness has been treated as a distinctive area of inquiry that has produced original findings concerning contraceptive choice pre-decisions, type of information sought by users, and cultural conceptions about gynecological problems. The concept of *regla blanca* emerging from autodiagnósticos looks consistent enough to merit replication and independent validation.

Program's method targets were detected in Mexico and Peru and four contraceptive continuation studies in Peru took into account such program goals as the desirability of reducing method shifting and contraceptive discontinuation

3. Delivery Processes. Waiting time and use of informed consent forms have been described in Brazil and Mexico. Studies in Peru and Brazil have supplied observations about the supervision process and limitations of information exchange between providers and users. In Peru, the provider's approach to interpersonal relations and his/her lack of concern for users' views of gynecological problems have been reported; courtesy biases have been avoided, and user satisfaction with the client-provider interaction has been found to be positive toward some aspects of care while negative toward others. The observed limitations of user contraceptive knowledge after receiving services suggest that programs must rely more on well-designed written information to help clients solve usage problems at home.
4. Outcomes Encompassed. Program's method targets were detected in Mexico (IMSS) and Peru (Santa) and four contraceptive continuation studies in Peru took into account such program goals as the desirability of reducing method shifting and contraceptive discontinuation. Meeting the reproductive intentions and improving the health status of clients were secondarily encompassed in these studies (hence the lower case x in the Client Outcome cell of Grid. Provider outcomes were not considered systematically.

Interventions to improve the quality of care

This section takes into account the relevance of the most significant findings

of INOPAL III interventions to specific dimensions of the quality of care.

Choice

Choice transcends the concept of selection of one among several family planning methods, for it can apply to such essential decisions as whether to recur to emergency contraception (EC) and is also relevant to preferences pertaining to maternal and gynecological services.

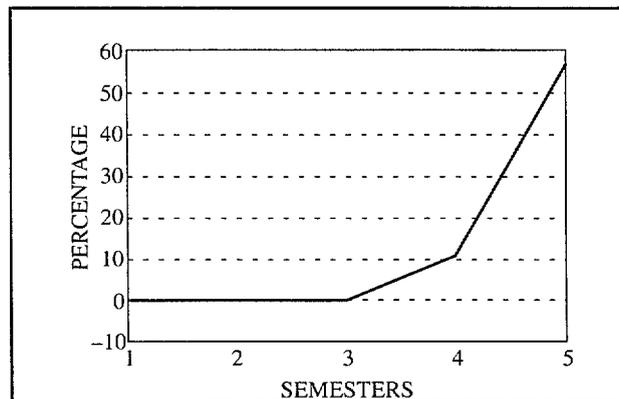
At the Center for Support Therapy of Mexico's Attorney General Office, Vernon et al. (1998b) distributed IEC materials and trained 97 psychologists and other personnel in EC counseling to victims of rape in 1996. The number of victims that received information about the EC option raised sharply after the intervention (see **Graph 5**).

Also in Mexico, IMIFAP mailed EC pamphlets to physicians and pharmacists and increased the proportion who had heard about EC from 38% to 61% and from 5% to 26%, respectively. Direct distribution of EC pamphlets to students of Universidad Autónoma de México increased the percentage who had heard about EC from 37% to 50% (Givaudan et al., 1998). Going one step further, CEMOPLAF (1998) introduced emergency-contraception service provision at its clinics in Ecuador and found users for them. **Figure 4** depicts the three studies.

Information Exchange

INOPAL III interventions to improve the quality of the information exchange between service providers and users have centered on instrument development. In Ecuador, the Ministry of Public Health developed and tested algorithmic job aids as complements to national Reproductive

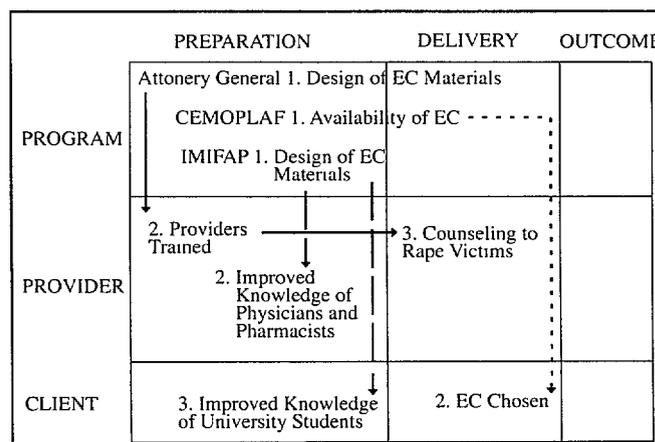
GRAPH 5
PERCENTAGE OF VICTIMS OF RAPE WHO RECEIVED EMERGENCY CONTRACEPTION COUNSELING, MEXICO



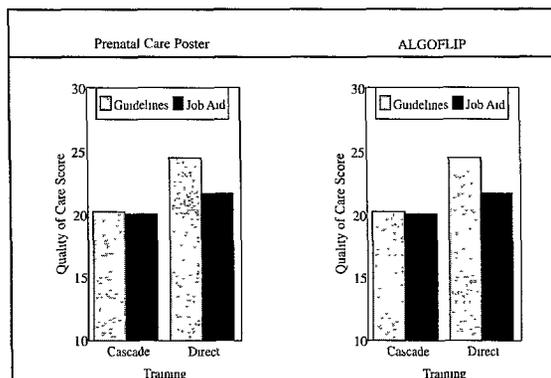
Health Care Guidelines developed with JHPIEGO's assistance. One was a poster to guide prenatal care and the other was a 46-page table flipchart (ALGOFLIP) concerning family planning and gynecological health.¹² ALGOFLIP offered guidance concerning what to ask and what to say at

Choice transcends the concept of selection of one among several family planning methods, for it can apply to such essential decisions as whether to recur to emergency contraception (EC) and is also relevant to preferences pertaining to maternal and gynecological services

FIGURE 4
CHOICE X PHASES X SUBJECTS



GRAPH 6
EFFECTS OF INTERVENTION ON QUALITY OF CARE, ECUADOR



INOPAL III interventions to improve the quality of the information exchange between service providers and users have centered on instrument development

each step of the consultation for the provider and offered illustrative figures for the user. A national sample of SDPs was randomly assigned by strata to receive only the Guidelines (N = 36) or the Guidelines and the job aids (N = 36). Providers from the 72 SDPs attended one-day training workshops and were asked to train colleagues in cascade back at their SDPs. A few weeks later, pregnant and nonpregnant simulated clients solicited services from both (providers that had been trained at the workshops and providers assumedly trained in cascade) and filled out behavioral checklists from which quality of care scores were computed. While the prenatal poster showed no effects (see Graph 6), ALGOFLIP seemed to cause improvements on providers trained directly ($p < .14$). The result might have been more consistent had more providers used the job aid during the consultation with the simulated client; only 1 in 4 did it. Nevertheless, providers (either

trained directly or in cascade) who used ALGOFLIP during the consultation showed significantly higher quality of care scores than those who did not ($p < .00$), suggesting that the instrument was useful but more work was needed to motivate providers to use it.¹³ At a follow-up workshop, providers said that training had been too short and they still felt unskilled in its use and that they were not apt to spend too much time with a single user, and contributed suggestions to improve the job aids.¹⁴ Thus, ALGOFLIP was redesigned, becoming a 65-page instrument that offers branches for providers willing to spend all the time needed and providers with little time available (León et al., 1998). Ecuador's MOH will distribute the improved versions to all the reproductive health providers of the nation when the new Reproductive Health Care Guidelines are officially introduced.¹⁵

INOPAL III also cooperated with JHPIEGO in Peru helping to test and improve pamphlets for users devised by the MOH¹⁶ as complements to its Reproductive Health Care Guidelines. The pamphlets were improved on the basis of the field experience (León et al., 1997) and are being distributed nationally with the Guidelines.

In Ica, Peru Guerrero et al. (1998) devised and tested a protocol to guide prenatal care. Exit-interviews with cohorts of users that received services before or after the intervention revealed an 85% increase in performance of IEC tasks at an intervention hospital while a control hospital showed a 22% decrease. Changes observed in interpersonal, clinical, and laboratory tasks also showed improvements. Global

quality of care scores were significantly higher in the intervention hospital than in the control hospital ($p < .01$).

Finally, in a joint project with INOPAL and Johns Hopkins University Population Communication Program, INPPARES designed interactive software and placed during two months a touchscreen multimedia station at its Patres clinic to offer individualized information to visitors, to prepare them for service delivery (Gárate et al., 1998). A total of 1,713 consultations were registered, and interest in specific topics was shown to be contingent on age (see Table 6). Figure 5 depicts the development of the four studies.

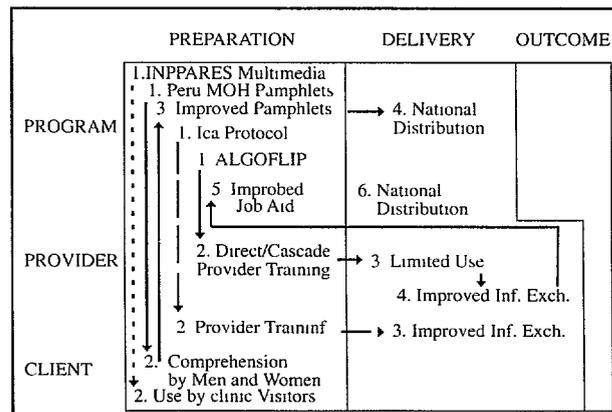
Relations with Clients

In Honduras, Tegucigalpa’s “Escuela” Hospital trained 100% of the nursing staff in family planning counseling and hired additional physicians. In a half-time project evaluation, the responses of a cohort of 209 women interviewed in the Hospital’s postpartum and gynecology wards before the intervention were compared with those of a cohort of 201 women interviewed after the intervention. Prior to the intervention, women waited 1 hour and 43 minutes on average before being seen by a staff member. The intervention reduced waiting time to 1 hour and 10 minutes, $p < .00$. (Medina & Mendoza, 1998).

Several INOPAL III interventions have been specifically purported to increase user

In a joint project with INOPAL and Johns Hopkins University Population Communication Program, INPPARES designed interactive software

FIGURE 5
INFORMATION EXCHANGE X PHASES X SUBJECTS



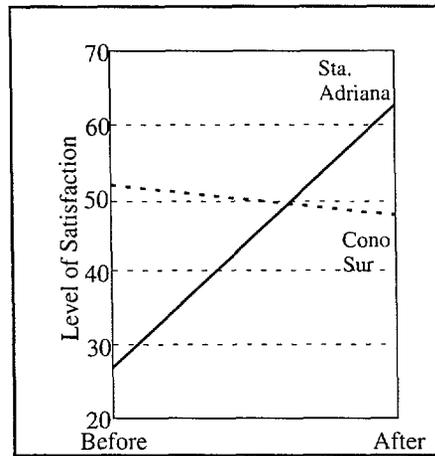
satisfaction. In Juliaca, Peru, Andía et al. (1998) interviewed postpartum women to learn about satisfactory and dissatisfactory aspects of birthing services. Then they introduced changes in a health center (Santa Adriana) while another health center was used as control (Cono Sur). Traditional delivery practices (meals, dress, destiny of placenta, presence of relatives) were incorporated, personnel were trained in interpersonal relations and cultural differences, and the infrastructure was improved to provide greater

Several INOPAL III interventions have been specifically purported to increase user satisfaction

TABLE 6
MOST CONSULTED TOPIC, PER AGE LEVEL,
PATRES CLINIC, LIMA, PERU

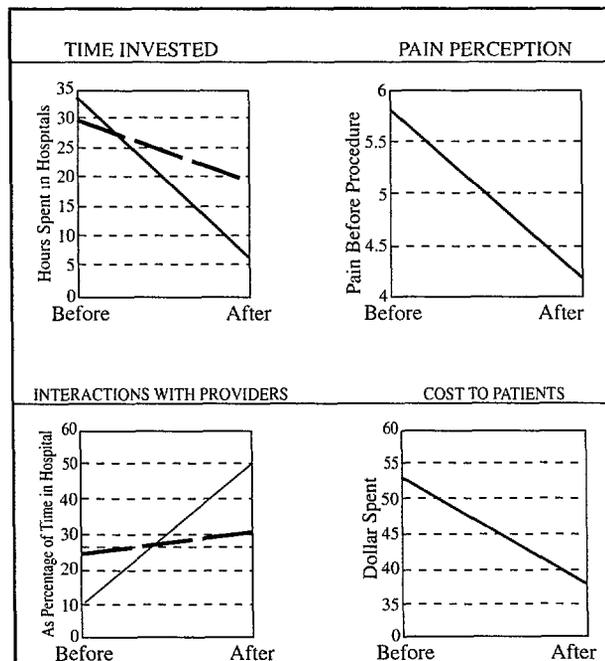
| Up to 13 | 13-19 | 20-24 | 25-29 | 30-39 | 40+ |
|----------|-------|-----------------|-------|-----------------|-----|
| Organs | | Family Planning | Cycle | Family Planning | |

FIGURE 6
SATISFACTION WITH DELIVERY FACETS BEFORE AND AFTER INTERVENTION, BY TREATMENT GROUP, JULIACA, PERU



safety and comfort (warmer temperature, less illumination, etc.). Cohorts of postpartum women who had given birth at the health centers before and after the intervention were interviewed with respect to 18 care facets. Significant differences between the groups were observed in summated scores in the

GRAPH 7
RESULTS OF INTERVENTION FOR POST-ABORTION PATIENTS, CARRIÓN HOSPITAL, CALLAO, PERU (PLUS RESULTS OF OAXACA STUDY IN DOTTED LINES)



posttest, and a significant positive change was observed in the experimental health center (but not in the control health center, see Figure 6).

In a quasi-experiment that started with a qualitative exploration of the attitudes and practices of providers and users of postabortion care (Gárate & Aliaga, 1996), the Carrión Hospital in Callao, Peru reorganized services; improved the infrastructure; trained service staff in the use of MVA, family planning counseling, and interpersonal relations; and introduced other changes (Benson et al., 1998; see also chapter on postabortion care).

Graph 7 compares a cohort of patients treated before the intervention (N=102) with one treated after it (N=102) on such patient-relevant variables as the time spent at the hospital, the degree of pain experienced¹⁷, the proportion of time spent in interactions with providers, and the monetary cost of care for the patient. The intervention modified significantly these sources of patient satisfaction and increased significantly global user satisfaction. Figure 10 also presents findings from a similar study conducted in Oaxaca, Mexico with INOPAL participation (Brambila et al., 1998).¹⁸ Results were positive though less markedly so than those of the Carrión study; this may be explained by the fact that the Oaxaca intervention was less encompassing. Finally, Fuentes et al. (1998) compared three models of postabortion care in six large hospitals in metropolitan Mexico City. In exit-interviews upon discharge from the hospital, they found that MVA used with a local para-cervical block accompanied by analgesics or sedatives if needed for pain control, along with patient counseling throughout the treatment, was

associated with less pain than sharp curettage employed with heavy sedation, hipnotics, and analgesics for pain control that essentially renders the patient unconscious.

Figure 7 depicts the three nonredundant interventions (Honduras, Juliaca, Carrión).

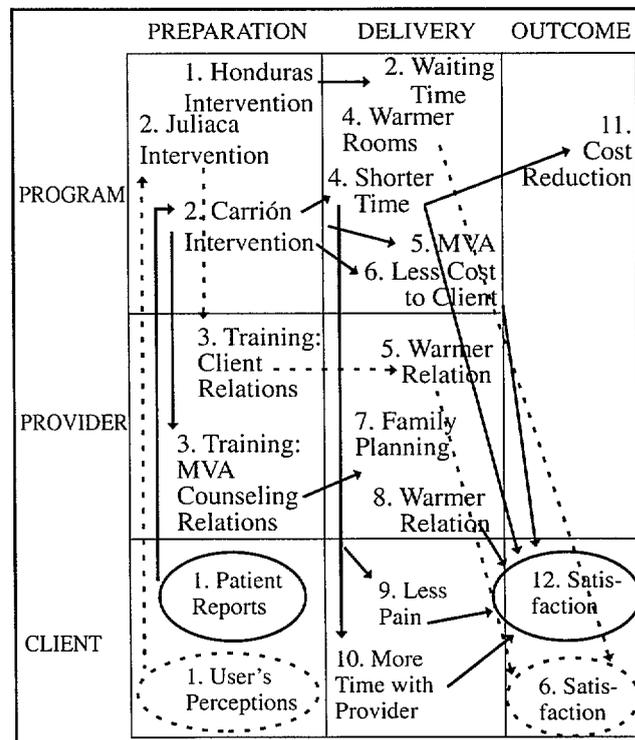
Provider Technical Competence

In Honduras, Hernández et al., (1998) gave theoretical training in family planning, vaginal cytology collection, and use of data collection instruments to 22 nurses, 60 auxiliary nurses (AN), and 22 general practitioners (GP), causing systematic increases in technical knowledge (**Figure 8**).

MVA for the treatment of incomplete abortions has been introduced in several Latin American countries and a number of health providers have been trained in its use (see chapter on postabortion care in this report).

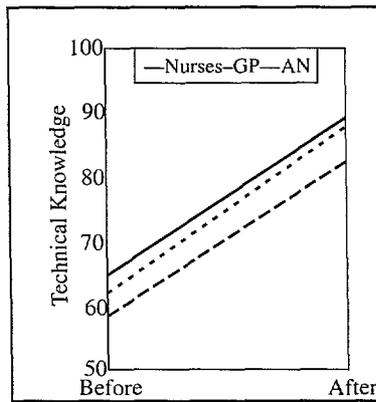
Improvements in provider technical competence have also been achieved in the area of obstetric emergencies (Aycacha et al., 1998). Three health networks making referrals to the Puno Hospital, Peru were intervened. Providers of the Acora network received the new Reproductive Health Care Guidelines of Peru's MOH. Providers of the Platería network received the Guidelines plus an algorithmic poster that guided the provider in case management. Providers of the Capachica-Coata network received the Guidelines and the poster and were trained in their use at a one-day workshop. In the month following the intervention, Acora made 2 obstetric-emergency referrals to the Puno Hospital, Platería made 3 referrals,

FIGURE 7
CLIENT RELATIONS X PHASES X SUBJECTS



and Coata-Capachica made 5. That is, an ordinal correlation equal to 1.00 was observed between amount of treatment and number of referrals. Prior to the intervention, the correlation was .12.¹⁹ Observations made at the emergency room of Puno Hospital indicated that 1 of the Acora referrals came with a Referral Form filled out, while 2 of the Platería and 4 of the Coata-Capachica referrals did it. Thus, a correlation equal to 1.00 was found between amount of treatment and the proportion of cases coming with Referral Forms filled out. Finally, the 10 clinic histories were given for blind evaluation to a maternal health expert. The Coata-Capachica network sent a smaller proportion of false alarm cases (1 out of 5) than the other two networks (4 out of 5), $p < .06$ (see **Figure 9**). These results suggest that the poster is useful

FIGURE 8
KNOWLEDGE OF FAMILY PLANNING AND OTHER SUBJECTS
BEFORE AND AFTER THEORETICAL TRAINING, HONDURAS

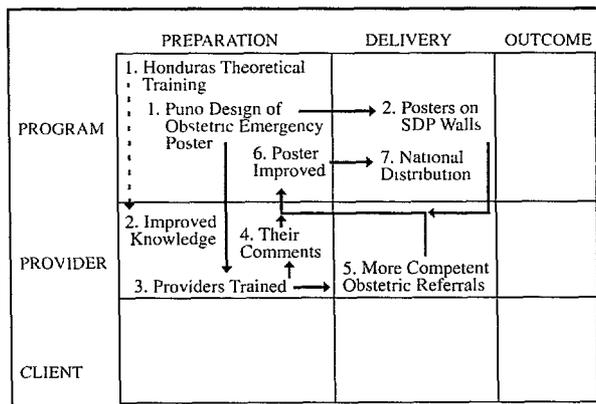


but requires training in its use to fulfil its potential. Since some providers said that the letters in the poster were too small, the instrument was graphically redesigned. Peru's

FIGURE 9
NUMBER OF OBSTETRIC REFERRALS PER SOURCE AND EXPERT
JUDGMENT CONCERNING EMERGENCY, PUNO, PERU

| Health Network | Expert Judgement | |
|--------------------|------------------|-----|
| | False Alarm | Hit |
| Capachica-Coata | 1 | 4 |
| Acora and Platería | 4 | 1 |

FIGURE 10
TECHNICAL COMPETENCE X PHASES X SUBJECTS



MOH will distribute the poster and a training manual at national level.

Figure 10 depicts the main steps of the provider-competence studies.

Follow-Up Mechanisms

Negative results have been reported in this area. Before the intervention, 57% of the postpartum women at Tegucigalpa's "Escuela" Hospital were told when to come back for a follow-up visit; after the intervention, the percentage descended to 19% (Medina & Mendoza, 1998). Both the Callao (Benson et al., 1998) and Oaxaca postabortion studies (Langer et al., 1998) reported improvements concerning information about follow-up visits given by providers to clients. However, the Callao study also reported a significantly decreased amount of information given about the need for personal hygiene and delay in return of sexual relations.

In rural Andahuaylas, Peru service providers interpret as discontinuation women's failure to return for resupply and explain this failure on the basis of the limitations that illiteracy posits to the use of printed IEC materials that could help solve usage problems at home. A pretest with family planning users found that only 15.8% of the women were able to speak Spanish well and only 7% were able to read proficiently. Reynoso et al. (1998) thought that, whereas direct use of a written memory aid was not possible, the women could recur to their better educated husbands as readers and translators and developed algorithmic pamphlets for each reversible family planning method. A survey revealed that 61.7% of users's husbands supported women's use of family planning. Preliminary

findings from this on-going study after distribution of the pamphlets show a high level of women’s acceptance (88.6%). Figure 11 depicts the steps of this study.

Constellation of Services

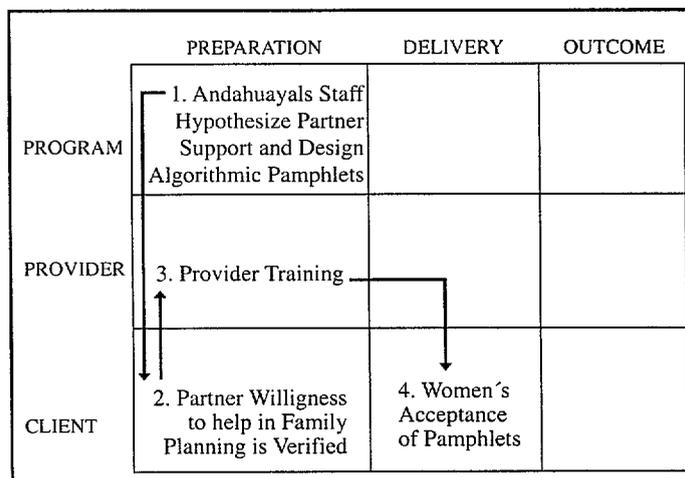
INOPAL helped Well-Start (1997) to implement in Honduras a self-tracking monitoring system to influence resource allocation decisions for the purpose of improving the quality of breast-feeding services that included criteria for designating hospitals as “Baby Friendly”. The chapters on postabortion care and integration of reproductive health services of this report describe a number of other interventions in this area.

Quality of Care Interventions: Summary, Conclusions, and Recommendations

1. Scope of Services. Family planning was the central focus of the quality of care interventions. The studies were concerned with the integration of family planning and reproductive health services, emergency contraception, counseling, training, algorithmic job aids, and conventional IEC. Essential aspects of maternal health services were addressed: mainly postabortion care but also birthing services, obstetric emergencies, and prenatal care. Gynecological health (STDs, cancer prevention, etc.) was addressed tangentially, as a secondary element of counseling or IEC materials. Specific interventions in gynecological health ought to be designed to respond to the concerns stated by women in diagnostic studies.

Family planning was the central focus of the quality of care interventions. The studies were concerned with the integration of family planning and reproductive health services, emergency contraception, counseling, training, algorithmic job aids, and conventional IEC

FIGURE 11
FOLOW-UP X PHASES X SUBJECTS



2. Institutional Impacts. One of the main indicators of OR success is the scaling-up of a tested solution. This was achieved in 3 of the 15 intervention studies reviewed in this section. Tested job aids have been targetted by Ministries of Health of two countries for national distribution despite the fact that the two studies were formulated under severe time constraints. This type of success probably owes in part to the apparent simplicity and few demands

One of the main indicators of OR success is the scaling-up of a tested solution. This was achieved in 3 of the 15 intervention studies reviewed

of the tested solutions. Other projects (e.g., postabortion care in Peru) stimulated intense involvement on the part of program management, thus promising solution sustainability.

3. **Quality of Care Dimensions.** Information exchange was one of the most researched dimension (4 specific studies, plus other interventions that reported information-exchange results as secondary findings; e.g. Benson et al., 1998; Langer et. al., 1998). It also generated most of the solutions that were scaled up (ALGOFLIP, pamphlets for users), had major health programs as protagonists (Ministries of Health of Ecuador and Peru), and in two studies encompassed dozens of SDPs. Improvements of client relations were sought centrally at least in five subprojects that also affected other quality of care dimensions. They required complex interventions and measurements (6 to 12 elements in **Figure 7** versus 2 to 6 corresponding to information exchange, **Figure 5**). Improvements of provider technical competence were fewer in number, though one of them was followed by significant scaling-up. Choice was associated with the introduction of emergency contraception, a valuable health initiative. Follow-up was the weakest area: only one intervention was specifically designed to improve follow-up and negative findings emerged as tangential observations from other studies.

4. **Outcomes.** Complex interventions were designed to improve an important client outcome: user satisfaction, both in postabortion and birthing contexts. Cost reduction is a result expected by programs that the quality-of-care literature does not consider a quality-of-care outcome; yet INOPAL III interventions showed that cost reductions can be caused by improvements introduced at the preparation and delivery phases of the quality of care. On the other hand, only scattered observations were available concerning the outcomes of individual providers (v.g., Mendoza, 1998). Since important achievements for clients and programs may depend upon provider motivation, this is a topic that deserves empirical inquiry.

5. **Lessons from Job Aid Development.** Complex service algorithms were disaggregated into simple step-by-step decisions and presented in parallel materials for the provider and the user (ALGOFLIP) or were designed as simple two-dimensional contingency tables (Ecuador and Puno/Peru posters concerned with obstetric emergencies and prenatal and perinatal care). The projects were started with the belief that the job aids would be accepted by service personnel and used immediately after minimal training, if at all. The two instances showed that the job aids caused net improvements in the quality of care. However, the job aids were used infrequently, and the reason for the subutilization was that providers felt unskilled in their use or found trouble with specific design problems,

INOPAL III interventions showed that cost reductions can be caused by improvements introduced at the preparation and delivery phases of the quality of care

such as letter size. Similar was the case of ALGOSSISAR in Guatemala. Strengthened training was the solution devised in Guatemala. The Ecuador and Peru Ministries of Health introduced improvements in the job aids following suggestions from the providers and then scaled-up the solution. The lessons learned are that job aids (a) must be field-tested and improved in creative multiple-cycle interactions with future users and (b) providers must be carefully trained until they develop the required skills.

Methodological Issues

Several methodological innovations took place in INOPAL III. Global scores were created on the basis of Yes-No conditions in Situation Analysis studies to synthesize into a single indicator the preparedness of SDPs to provide specific services (Noble, 1997; Noble & Solís, 1997; Noble et al., 1998a, 1998d). Qualitative data collection and analysis techniques were employed with unprecedented frequency. **Table 7** shows the balance of quantitative and qualitative INOPAL III descriptive studies conducted in Peru. Behavioral observations transcended the traditional focus on providers and were applied to the measurement of pain suffered by postabortion patients (Fuentes et al., 1998). Triangulation was used in several instances; for example, 8 items on **Table 8** pertain to a diagnostic study that was carried out in the province of Santa involving focus groups, in-depth interviews, observation checklists, and structured survey questionnaires (León, 1997); other 3 items pertain to a diagnostic

Job aids must be field-tested and improved in creative multiple-cycle interactions with future users and providers must be carefully trained until they develop the required skills

TABLE 7
TYPE OF INOPAL III DESCRIPTIVE STUDIES (PERU)

| Study | Quantitative | Qualitative |
|-----------------------------|--------------|-------------|
| Altobelli (1997) | X | |
| Cáceres & Villanueva (1997) | X | |
| Gárate & Aliaga (1998) | | X |
| Gárate & De la Peña (1996) | | X |
| Gordillo et al. (1998) | X | X |
| Noble (1997) | X | |
| Noble et al. (1998b) | X | |
| Noble et al. (1998d) | X | |
| Pecho et al. (1998) | X | |
| Rivera et al. (1998) | X | X |
| Salazar & Llajamango (1997) | | X |
| Tapia (1998) | | X |
| Velásquez et al. (1996) | X | |

Several methodological innovations took place in INOPAL III. Global scores were created on the basis of Yes-No conditions in Situation Analysis, qualitative data collection and analysis techniques were employed with unprecedented frequency. Behavioral observations transcended the traditional focus on providers and were applied to the measurement of pain suffered by postabortion patients

study performed in Huancavelica that encompassed focus groups, in-depth interviews, and structured survey questionnaires (Altobelli & León, 1997).

A book on operations research (León & Ch', 1998) expressed the diversity of approaches and techniques. It encompassed quantitative (León, 1998) and qualitative (Brems et al., 1998) conceptual frameworks as well as quantitative (Ramos et al., 1998) and qualitative (Cobián & Reyes, 1998) descriptive studies. Furthermore, the book included interventions (Benson et al., 1998) that were preceded by qualitative studies (Gárate & Aliaga, 1996) and interventions (Velásquez et al., 1998) that were preceded by surveys (Velásquez et al., 1996).

As for the intervention studies, while pre-experiments maintained an important presence, at least 12 interventions seeking to improve access or the quality of care were based on strong research designs (see Table 8). True experiments were the least frequently used designs, and lacked pretests. Nevertheless, strong internal and statistical validities were achieved in the innovative Velásquez et al. (1998) study that randomly assigned client cohorts to treatments and used their averages as units of analysis. No assignment biases were detected in the León et al. (1998)

experiment, yet two studies that were designed as true experiments (Quispe et al., 1998; Vernon et al., 1998) showed systematic pre-intervention nonequivalences and became quasi-experiments (see León, 1998 about the difference between a true experiment and the non-equivalent control group design).

Five interventions were evaluated by means of a design that Cook and Campbell (1979) described as the Cohort Design in Institutions with Cyclical Turnover, although in the case of health organizations client turnover is not cyclical but more or less continuous. In this application, the pretest is conducted on an artificially cut cohort of users and the posttest on a different cohort. These were the most meticulously conducted quality-of-care interventions in INOPAL III.

In two instances, the cohorts design was combined with the nonequivalent control group quasi-experiment with pretest and posttest and generated results of an internal validity almost comparable to that of true experiments. This strong combination was achieved through replication of the cohorts design in an SDP that did not receive the treatment and allowed the investigators to control for most of the threats to internal validity that are typical of each component.

The nonequivalent control group with pretest and posttest was the most frequently used strong design (7 studies). A majority of the studies implementing it (Andía et al., Guerrero et al., Tutaya et al., Vernon et al.) showed the control group to be below the experimental group in pretest values. In some cases, this responded to a deliberate decision to assign the

As for the intervention studies, while pre-experiments maintained an important presence, at least 12 interventions seeking to improve access or the quality of care were based on strong research designs. True experiments were the least frequently used design, and lacked pretests

treatment to the SDP that needed the most the improvements, which is a legitimate decision. Hence, their results may be specific to situations in which the quality of care is particularly poor and the comparison is made with a group of superior performance, which is an issue of external validity. Nonetheless, it will be useful to test in the future the power of the interventions to cause positive effects by comparison with more comparable control groups.

Another limitation to draw clear-cut conclusions originated in the complexity of some interventions. For example, the Benson et al. (1998) study of postabortion care, by changing several factors (physical infrastructure, reorganization of service, service price decrease, introduction of AMEU, personnel technical competence, personnel interpersonal attitude, etc.), reduced its generalizability, and hence its scaling-up, for it is improbable that other institutions will be able to introduce so many changes. Nevertheless, it is a legitimate option to apply OR to cause particular changes. Comparison of its results with those stemming from simpler interventions (e.g., Oaxaca) may help to understand the causal role of the individual components.

Finally, some studies had small (e.g., LeÚn et al., 1998) or extremely small sample sizes (e.g., Aycacha et al., 1998). Although statistical significance was approached or attained in these studies, the reliability of their findings could be called

into question. The time lines of the sub-projects (5 or 6 months) were too tight; considerable part of the time was dedicated to preparation of the interventions and the time remaining did not permit appropriate accumulation of cases. Special opportunities to introduce improvements in programs sometimes come with this type of restrictions, and program decisions based on incomplete data can be expected to be better than decisions based on personal criteria. Nevertheless, future OR studies ought to be designed with more reasonable time frameworks.

TABLE 8
STRONG INOPAL III INTERVENTION STUDIES OF RELEVANCE TO ACCESS OR
QUALITY OF CARE, PER RESEARCH DESIGN AND STATISTICAL TEST

| Study | Research Design | Statistical Test |
|------------------------|-----------------------------------|------------------|
| | <u>True Experiments</u> | |
| Velásquez et al., 1998 | Posttest Only, Cohorts as Units | Yes |
| León et al. 1998 | Posttest Only, Providers as Units | Yes |
| | <u>Quasi-Experiments</u> | |
| Benson et al., 1998 | Turnover Cohorts | Yes |
| Brambila/Langer, 1998 | Turnover Cohorts | Yes |
| Medina/Mendoza, 1998 | Turnover Cohorts | Yes |
| Quispe et al., 1998 | Nonequivalent Control Group | Yes |
| Aycacha et. al., 1998 | Nonequivalent Control Group | Yes |
| Tutaya et. al., | Nonequivalent Control Group | Yes |
| Vernon et. al., | Nonequivalent Control Group | No |
| Vargas et. al., | Nonequivalent Control Group | No |

Notes

- ¹ The surveyed women were not able to state whether their pregnancy had been wanted or not. Nonetheless, the reproductive intentions of the women exposed to pregnancy strongly suggest that most pregnancies were unwanted. Thus, unmet need may have encompassed as many as three of every four MWRAs, either in Acobamba or Castrovirreyna. The fact that less than 1% of the women exposed to pregnancy desired a child soon can be attributed to the extreme poverty and recent terrorism suffered by the Huancavelican population.
- ² The population of Fortaleza could seek services from alternative providers. In the interior, however, the SDPs surveyed were practically the sole providers. Similar results have recently been reported from a second-round Situation Analysis in the state of Bahia, Brazil (Noble et al., 1998a) and may be expected from an on-going study that is assessing the availability of postabortion care services in Bolivia (De la Quintana, 1998).
- ³ León (1998) has described misleading conclusions obtained from focus group discussions in Ecuador in which poor women preferred not to expose their economic limitations.
- ⁴ Nevertheless, Depo-Provera has become the preferred modern contraceptive in rural Peru (León & Parra, 1997).
- ⁵ Dissemination of these findings in Huancavelica (Altobelli & León, 1997) prompted several changes in health centers, including adoption of some traditional elements of care as part of their regular services.
- ⁶ It seems that the IEC model was not as successful as the other models because it failed to improve physical accessibility for the visited woman. In order to get any contraceptive, the woman would have had to go to the hospital, another SDP, or a pharmacy.
- ⁷ The campaign against modern contraceptives was led by the Catholic church and was particularly violent in Ayacucho. In the follow-up study, some women said they could not have accepted a method "because I am Catholic."
- ⁸ A follow-up experiment showed that training based on role-playing and direct supervision during service delivery facilitated adoption and appropriate use of the job aid.
- ⁹ The four studies computed preparedness scores combining several indicators. The Situation Analysis study in Libertadores-Wari (Li & Gárate, 1996) is not included here because it presented information on an item-by-item basis.

- ¹⁰ Preparedness to offer Papanicolaou smears requires: a trained provider (doctor or nurse), GYN exam table, speculum, lamp or hand-held light, wooden ayres spatulas, slides, gloves, and equipment or supplies for sterilizing instruments.
- ¹¹ Personal communications from Jeanne Noble (La Caleta and Guzmán Barrón), María Rosa Gárate (Puno), and Laura Altobelli (Ayacucho).
- ¹² Algorithmic posters to manage obstetric emergencies and guide perinatal care were also developed.
- ¹³ The same providers showed no significant differences in the quality of prenatal care. This allowed the investigators to attribute the observed differences in family planning and gynecological care to ALGOFLIP and not to traits of the providers.
- ¹⁴ The suggestions for improvement pertained to a few technical concepts that were not expressed with sufficient clarity and to several aspects of graphic design.
- ¹⁵ The posters on obstetric emergencies and perinatal care were also improved at the follow-up workshop and the Ministry decided to distribute them nationally.
- ¹⁶ The MOH was assisted by INPPARES and APROPO in the design of the pamphlets.
- ¹⁷ The pain scores in Graph 7 refer to the pre-(surgical) procedure, that was longer and more painful than the during-procedure and after-procedure phases. In fact, the results were the opposite for these two phases, though they did not attain significance.
- ¹⁸ The author of this chapter computed the percentage of the hospital stay spent in interaction with providers. As was the case of the Callao hospital, the number of minutes spent by doctors and nurses in interaction with patients were summated. Thus, this indicator overestimates time spent with providers, for it does not discount the time spent by both physician and nurse together with the same patient. Perception of pain and cost to patients were not registered in the Oaxaca study.
- ¹⁹ The same result emerged when control was exerted for size of the population of pregnant women per network.

References

- Altobelli, L. C. (1998) "Identificación de la demanda insatisfecha para servicios de salud reproductiva en Huancavelica, Perú." Documento de Trabajo No. 27. Mexico, D.F.: INOPAL III/Population Council.
- Altobelli, L. C., & F. R. León (1997) Changing community perceptions of reproductive health services and reducing the unmet need for them in Peru's highlands: I. A baseline study. Final Report of INOPAL III Sub-project. Lima: Population Council.

- Améndola, L., D. Euceda, R. Lundgren, I. Mendoza, & N. Alí. (1998) "El uso de listados para detectar y referir mujeres de comunidades rurales a servicios de salud reproductiva." Documento de Trabajo No. 8. Mexico, D.F.: INOPAL III/Population Council.
- Andía, F., A. Chambi, G. Bernal, S. Vallenias, & F. R. León (1998) "Improving the satisfaction of puerperal women through an alternative model of delivery: A quasi-experiment in Juliaca, Puno." In S. Vallenias & F. R. León, Institutionalizing operations research to strengthen Peru Ministry of Health's reproductive health services in priority regions. Final Report of INOPAL III Sub-project. Lima: Population Council.
- Aycacha, E., J. Miranda, S. Checa, M. Apaza, F. R. León, M. Espinoza, R. Monge, & A. Calderón (1998) "Improving the system of obstetric emergency referrals in Puno." In F. R. León, Complementary grants to sponsor operations research studies in three regions of Peru. Final Report of INOPAL III Sub-project. Lima: Population Council.
- Benson, J., V. Huapaya, M. Abernathy, L. Juárez, J. Aguilar, & T. King (1998) "Mejoramiento de calidad y reducción de costos en un modelo integrado de atención postaborto: Resultados preliminares." Documento de Trabajo No. 18. Mexico, D.F.: INOPAL III/Population Council. Reprinted in F. R. León & M. Chú, Eds. (1998) Investigación de operaciones en planificación familiar y salud reproductiva: Conceptos y casos. Lima: Instituto de Estudios en Población de la Universidad Peruana Cayetano Heredia/Population Council.
- Bertrand, J. T., R. J. Magnani, & J. C. Knowles (Undated) Handbook of indicators for family planning evaluation. Chapel Hill, NC: The Evaluation Project.
- Boongarts, J., & J. Bruce (1995) "The question of access: Response." *Studies in Family Planning* 26, 4: 243-244.
- Brambila, C., A. Langer, C. García, A. Molina, A. Heimburger, & V. Barahona (1998). "Análisis de costos de los servicios post-aborto en el Hospital General Aurelio Valdivieso, Oaxaca, México." Documento de Trabajo No. 16. Mexico, D.F.: INOPAL III/Population Council.
- Bramon, J., J. Valencia, L. Bustamante, C. Huamanchao, G. Reynaga, S. Vallenias, & F. R. León (1998) "Desired elements of delivery care: A satisfaction study of users and potential users of health centers in Huancavelica." In S. Vallenias & F. R. León, Institutionalizing operations research to strengthen Peru Ministry of Health's reproductive health services in priority regions. Final Report of INOPAL III Sub-project. Lima: Population Council.
- Brems, S., B. Feringa, & C. Yon (1998) "Investigación cualitativa." In F. R. León & M.

- Chú, Eds. (1998) Investigación de operaciones en planificación familiar y salud reproductiva: Conceptos y casos. Lima: Instituto de Estudios en Población de la Universidad Peruana Cayetano Heredia/Population Council.
- Bruce, J. (1990) "Fundamental elements of the quality of care: A simple framework." *Studies in Family Planning* 21, 2: 61-91.
- Cabral, J., A. Flores, F. Huerta, C. Baltazar, F. García, C. Orozco, & C. Brambila (1998) "Encuesta de necesidades de información, educación y comunicación (IEC) sobre salud reproductiva en seis etnias en México." Documento de Trabajo No. 6. Mexico, D.F.: INOPAL III/Population Council.
- Cáceres, C., & E. Villanueva (1997) "Comportamiento del proveedor en la consulta de planificación familiar." En F. R. León (1997) *Quality of care and user outcomes in the province of Santa, Peru: I. A diagnostic study with focus on providers.* Final Report of INOPAL III Sub-project. Lima: Population Council.
- CEMOPLAF (1998) "Four approaches to providing emergency contraception in Ecuador." In INOPAL III, Twelfth Quarterly Performance Report. Washington, DC: April 20.
- Cobián, E., & S. Reyes (1998) "Percepciones masculinas de las necesidades y servicios de planificación familiar y salud reproductiva: Un estudio cualitativo en Chimbote." Documento de Trabajo No. 17. Mexico, D.F.: INOPAL III/Population Council. Reprinted in F. R. León & M. Chú, Eds. (1998) *Investigación de operaciones en planificación familiar y salud reproductiva: Conceptos y casos.* Lima: Instituto de Estudios en Población de la Universidad Peruana Cayetano Heredia/Population Council.
- Cook, T. D., & D. T. Campbell (1979) *Quasi-experimentation: Design and analysis issues for field settings.* Chicago: Rand McNally.
- Córdova, J. (1998) "Feasibility study for the introduction of MVA in Bolivia." Presentation at First Workshop on Research on Post-abortion Care. La Paz: Ipas, 7/22/98.
- Cospín, G., & R. Vernon (1998) "Educación sobre salud reproductiva en áreas indígenas de Guatemala a través de maestros bilingües." Documento de Trabajo No. 2. Mexico, D.F.: INOPAL III/Population Council.
- De la Quintana, C. (1998). "An assessment of PAC services in Bolivia." Presentation of preliminary findings at First Workshop on Research on Post-abortion Care. La Paz: Ipas, 7/22/98.
- Donabedian, A. (1988) "The quality of care: How can it be assessed?" *Journal of the American Medical Association* 260, 12: 1743-1848
- Feringa, B. (1998) Personal communication. Lima, July.
- Foreit, J. R., R. Lundgren, I. Mendoza, D. M. Valmaña, & J. Canahuati (1998) "Estrategias para involucrar a los hombres en el cuidado de la salud reproductiva: De la administración de la granja a la administración de la familia." Documento de Trabajo No. 10. Mexico, D.F.: INOPAL III/Population Council.
- Fuentes, J. A., D. L. Billings, & J. A. Cardona (1998). "Women's experience of pain during the postabortion period in Mexico." In D. Huntington, *Advances and challenges in postabortion care operations research.* Summary report of a global meeting. New York: Population Council.
- Galdos, S. (1998) Comment at Teleconference of First Ladies on Health and Maternal Mortality. Lima: U. S. Embassy, May 14.
- Gárate, M. R., & E. Aliaga (1998). "Percepciones de la atención del aborto incompleto no complicado en el Hospital Daniel Alcides Carrión del Callao." Documento de Trabajo No. 23. Mexico, D.F.: INOPAL III/Population Council.
- Gárate, M. R., & J. Cáceres (1997) "Conocimiento de los proveedores sobre planificación familiar y comunidad." En F. R. León (1997) *Quality of care and user outcomes in the province of Santa, Peru: I. A diagnostic study with focus on providers.* Final Report of INOPAL III Sub-project. Lima: Population Council.
- Gárate, M. R., & M. De la Peña (1996) Estudio cualitativo en mujeres descontinuidoras de inyectable Depo-Provera. Final Report of INOPAL III Sub-project. Lima: Population Council.
- Gárate, M. R., A. Espinoza, A. Velásquez, M. Tello, & C. Queirolo (1998) Introducing the use of multimedia as an information instrument about sexual and reproductive health at INPPARES, Lima, Peru. Final Report of INOPAL III Sub-project. Lima: Population Council.
- Gárate, M. R., M. Fukumoto, & B. Feringa (1997). "Women talk: Results from 17 auto-diagnósticos in rural and peri-urban Peru." Presentation at 125th Annual Meeting of the American Public Health Association. Indianapolis, IN: November.
- Givaudan, M., R. Vernon, C. Fuertes, & S. Pick (1998) "Estrategias de información sobre anticoncepción de emergencia." Documento de Trabajo No. 5. Mexico, D.F.: INOPAL III/Population Council.
- Gordillo, M. A., C. Pinazo, S. Vallenias, O. Jiménez, & F. R. León (1998) "Knowledge of alarm signs among pregnant women and significant others: A study in the province of Collao, Puno." In S. Vallenias & F. R. León, *Institutionalizing operations research to strengthen Peru Ministry of Health's reproductive health services in priority regions.* Final Report of INOPAL III Sub-project. Lima: Population Council.
- Guerrero, H., A. Flores, C. Ponce, L. Ríos, A. Ponce, & M. R. Gárate (1998) "Using new protocols to improve the quality of prenatal controls." In S. Vallenias & F. R. León, *Institutionalizing operations research to strengthen Peru Ministry of Health's reproductive health services in priority regions.* Final Report of INOPAL III Sub-project. Lima: Population Council.
- Hernández, L., Y. Villanueva, I. Mendoza, & L. Sagastume (1998) Informe de Avance del Proyecto "Expansión del rol de auxiliares de enfermería en la prestación de servicios de planificación familiar." Tegucigalpa: Population Council.
- Institute Haitien de Sante Commaunataire (1996) "Continued strengthening of family planning supervision." INOPAL III Quarterly Performance Report of 4/10/97. Washington, DC: Population Council.
- IMSS (1998) "Informed choice among acceptors of contraceptive methods after an obstetric event." Progress Report. INOPAL III Quarterly Performance Report of 01/20/98. Washington, D. C.: Population Council.
- Langer, A., C. García-Barríos, A. Heimburger, L. Campero, O. Ortíz, C. Díaz, V. Barahona, F. Ramírez, B. Casas, B. Winikoff, & K. Stein (1998) "Sí, se puede: Cómo mejorar la calidad de la atención postaborto en un hospital público. El caso de Oaxaca, México." Documento de Trabajo No. 11. Mexico, D.F.: INOPAL III/Population Council.
- León, F. R. (1994) *Manual del Test de Conocimientos de Planificación Familiar para proveedores no-profesionales: Versiones 3.0 y 5.2.* Unpublished manuscript. Lima: Population Council.
- León, F. R. (1997) *Quality of care and user outcomes in the province of Santa, Peru: I. A diagnostic study with focus on providers. II. A diagnostic study with focus on clients.* Final Report of INOPAL III Sub-project. Lima: Population Council.
- León, F. R. (1998) "Investigación operativa en planificación familiar y salud reproductiva." Documento de Trabajo No. 12. Mexico, D.F.: INOPAL III/Population Council. Improved version reprinted as "Investigación de operaciones e investigación operativa: Definiciones y principales diseños" in F. R. León & M. Chú, Eds. (1998) *Investigación de operaciones en planificación familiar y salud reproductiva: Conceptos y casos.* Lima: Instituto de Estudios en Población de la Universidad Peruana Cayetano Heredia/Population Council.
- León, F. R., & M. Chú, Eds. (1998) *Investigación de operaciones en planificación familiar y salud reproductiva: Conceptos y casos.* Lima: Instituto de Estudios en Población de la Universidad Peruana Cayetano Heredia/Population Council.
- León, F. R., M. E. Costa, P. Jácome, J. Ordóñez, E. Ottolenghi, M. Espinoza, & R. Moñe (1998) *Developing algorithmic instruments*

- to help providers and users to implement the new Reproductive Health Care Guidelines issued by the Ministry of Public Health of Ecuador. Final Report of INOPAL III Sub-project. Lima: Population Council.
- León, F. R., R. Hurtado, & R. Monge** (1994) The Service Test: Development and applications to evaluate provider training. Unpublished manuscript. Lima: Population Council
- León, F. R., & J. Parra** (1997) "Operations research and the expansion of DMPA use in Peru." Poster presented at the 125th Annual Meeting of the American Public Health Association. Indianapolis, November.
- León, F. R., M. E. Planas, & E. Cobián** (1997) Support for the dissemination of educational material for the Peruvian Ministry of Health's reproductive health service providers. Final Report of INOPAL III Sub-project. Lima: Population Council.
- Li, D., & M. R. Gárate** (1996) Línea de base de los recursos de salud reproductiva de la región Los Libertadores Wari 1996. Final Report of INOPAL III Subproject. Lima: Population Council.
- Marangoni, P., & A. Cuesta** (1998) "Estudio de capacidad de pago de clientes reales y potenciales." In C. Brambila, Ed., *Auto-sostenimiento financiero de los servicios de salud reproductiva*. Memorias de Conferencia Regional. Mexico: INOPAL III/ Population Council.
- Medina, R. M., & I. J. Mendoza** (1998) "Exit interview of patients hospitalized for partum in the infant-maternal section of the Hospital Escuela, Secretary of Health." Progress report of Strengthening of the post-partum and postabortion family planning program in the Hospital Escuela Sub-project of INOPAL III. Tegucigalpa: Population Council.
- Mendoza, I.** (1998) "Diagnostic study to guide the development of strategy to expand the role of auxiliary nurses in family planning service provision." Progress Report in INOPAL III. Quarterly Performance Report of 01/20/98. Washington, DC: Population Council.
- Munguía, B., & R. Vernon** (1998) Interactive kiosks as promotion strategies for reproductive health services. Final Report of INOPAL III Subproject. Mexico, D.F.: Population Council.
- Noble, J. A.** (1997) "Inventory of reproductive health resources in 25 health centers and posts in the department of Huancavelica." In L. C. Altobelli & F. R. León, *Changing community perceptions of reproductive health services and reducing the unmet need for them in Peru's highlands: I. A baseline study*. Final Report of INOPAL III Sub-project. Lima: Population Council.
- Noble, J. A., B. Lemos, L. Galvao, S. Mara, A. Ríos, & A. Viana** (1998a) Situation Analysis of reproductive health care in the state of Bahia, Brazil: Assessing the impact of interventions, 1994-1998. Final Report of INOPAL III Sub-project. Lima: Population Council.
- Noble, J., I. Ramos, L. Carbajal, F. Iturrizaga, E. Caballero, A. Padilla, & M. R. Gárate** (1998b) "Continuidad en la planificación familiar: Un seguimiento de usuarias de establecimientos públicos de la provincia de Santa". Documento de Trabajo No. 19 Mexico, D.F.: INOPAL III/Population Council.
- Noble, J. A., K. Roy, & A. Velásquez** (1998c) "Using self-administered questionnaires to estimate the prevalence of reproductive tract infections and high risk sexual behavior in Peru." In J. Patten, Ed., *Improving reproductive health: International shared experience*. Proceedings of a Two-day International Workshop. Bogor, Indonesia: Population Council
- Noble, J. A., D. Silveira, L. Galvao, & L. Correia** (1998d) "Situation Analysis of reproductive health care in the State of Ceará, Brazil: Assessing the impact of interventions in 1993-1997." Final Report of INOPAL III Sub-project. Lima: Population Council. Spanish version published as Documento de Trabajo No. 28. Mexico: INOPAL III/ Population Council.
- Noble, J., & N. Solís** (1997) "Preparación de los establecimientos para ofrecer servicios de planificación familiar." In F. R. León (1997) *Quality of care and user outcomes in the province of Santa, Peru: I. A diagnostic study with focus on providers*. Final Report of INOPAL III Sub-project. Lima: Population Council.
- Parra, J., Director of Reproductive Health, Peru's MOH** (1998) Personal communication. Lima: July.
- Pecho, I., F. R. León, J. Noble, & A. Ríos** (1998) "Fulfillment of reproductive intentions and continuation in family planning in Ayacucho one year after the home visit." In F. R. León, *Complementary grants to sponsor operations research studies in three regions of Peru*. Final Report of INOPAL III Sub-project. Lima: Population Council.
- Quispe, R., I. Pecho, C. Montoya, F. R. León, & R. Durand** (1998) "Prueba de tres modelos de visita domiciliaria para reducir la necesidad insatisfecha de planificación familiar en Ayacucho." Documento de Trabajo No. 20. Mexico: INOPAL III/ Population Council.
- Ramos, I., J. A. Noble, L. Carbajal, F. Iturrizaga, E. Caballero, A. Padilla, & M. R. Gárate** (1998) "Continuidad en la planificación familiar: Un seguimiento de usuarias de establecimientos públicos de la provincia de Santa". In F. R. León & M. Chú, Eds. (1998) *Investigación de operaciones en planificación familiar y salud reproductiva: Conceptos y casos*. Lima: Instituto de Estudios en Población de la Universidad Peruana Cayetano Heredia/Population Council.
- Ramos, I., & L. Wong** (1997) "Soluciones discutidas con los proveedores." In F. R. León (1997) *Quality of care and user outcomes in the province of Santa, Peru: I. A diagnostic study with focus on providers*. Final Report of INOPAL III Sub-project. Lima: Population Council.
- Reynoso, M., V. Taco, T. Lama, N. Limachi, Cl. Mamani, L. Yauris, Cr. Mamani, M. Alegría, I. Rojas, L. M. Alarcón, M. Canahuir, F. R. León, R. Monge, & A. Calderón** (1998) "Acceptance of a model of partner participation to improve the use of family planning among illiterate family planning users in Andahuaylas." In F. R. León, *Complementary grants to sponsor operations research studies in three regions of Peru*. Final Report of INOPAL III Sub-project. Lima: Population Council.
- Rivera, E., V. Guerra, E. Nepo, M. Calderón, E. Esquiche, & L. C. Altobelli** (1998) "Assessment of the quality of care and contraceptive continuation among clients of the family planning program of the Referral Hospital of Ayacucho." In F. R. León, *Complementary grants to sponsor operations research studies in three regions of Peru*. Final Report of INOPAL III Sub-project. Lima: Population Council.
- Salazar, V., & M. Llamamango** (1997) "Usos, actitudes, y conocimientos de las usuarias a la salida de la consulta." In F. R. León (1997) *Quality of care and user outcomes in the province of Santa, Peru: II. A diagnostic study with focus on clients*. Final Report of INOPAL III Sub-project. Lima: Population Council.
- Salazar, X., & E. Cobián** (1998) "Hablan los hombres y las mujeres". Seminar on Preliminary Results of Men as Partners in Health Project. Lima: Population Council (06/23/98)
- Salazar, X., & F. Rivero** (1997) "Percepciones de las mujeres sobre la calidad de los servicios." In F. R. León (1997) *Quality of care and user outcomes in the province of Santa, Peru: II. A diagnostic study with focus on clients*. Final Report of INOPAL III Sub-project. Lima: Population Council.
- Tapia, M.** (1998) "Los hombres y la salud reproductiva." Seminar on Preliminary Results of Men as Partners in Health Project. Lima: Population Council (06/23/98)
- Tutaya, C., F. Chávez, O. Chuchón, J. Rodríguez, M. Simbrón, O. Jiménez, & M. R. Gárate** (1998) "IEC in Quechua: A community experience in rural Vilcashuamán, Ayacucho." In S. Vallenás & F. R. León, *Institutionalizing operations research to strengthen Peru Ministry of Health's reproductive health services in priority regions*. Final Report of INOPAL III Subproject. Lima: Population Council.
- Valdivia, L., & M. R. Gárate** (1998) "Contraceptive continuation and factors that may affect it among users of reversible family planning method at the Puno Referral

- Hospital." In F. R. León, Complementary grants to sponsor operations research studies in three regions of Peru. Final Report of INOPAL III Sub-project. Lima: Population Council.
- Valverde, R., & H. Gonzáles** (1997) "Qualitative study." In L. C. Altobelli & F. R. León, Changing community perceptions of reproductive health services and reducing the unmet need for them in Peru's highlands: I. A baseline study. Final Report of INOPAL III Sub-project. Lima: Population Council.
- Vargas, T. de., J. H. Bratt, V. Dayaratna, J. R. Foreit, & D. H. Kress** (1998) "La respuesta del consumidor a los cambios de precios de los servicios de planificación familiar y salud reproductiva." Documento de Trabajo No. 9. Mexico, D.F.: INOPAL III/Population Council.
- Velásquez, A., N. Ostolaza, T. Williams, & J. R. Foreit** (1996) "Encuesta de satisfacción de usuarias en la clínica Patres de INPPARES." Unpublished document. Lima: INPPARES.
- Velásquez, A., L. Jiménez, A. Reckemer, M. E. Planas, F. R. León, R. Durand, & A. Calderón** (1998) "Incrementando la utilización de servicios de salud reproductiva en una clínica de Lima." Documento de Trabajo No. 4. Mexico, D.F.: INOPAL III/Population Council. Reprinted in F. R. León & M. Chú, Eds. (1998) Investigación de operaciones en planificación familiar y salud reproductiva: Conceptos y casos. Lima: Instituto de Estudios en Población de la Universidad Peruana Cayetano Heredia/Population Council. English version, "Increasing utilization of reproductive health services in a Peruvian clinic", in J. R. Foreit & T. Frejka, Ed., Family planning operations research: A book of readings. (Forthcoming)
- Vernon, R., & E. Ottolenghi** (1996) Algoritmo y guía para la oferta sistemática de servicios de salud reproductiva (ALGOSSISAR). México, D. F.: Population Council.
- Vernon, R., E. Ottolenghi, F. R. León, & J. Solórzano** (1998a) "Oferta sistemática de servicios de planificación familiar y salud reproductiva en Guatemala." Documento de Trabajo No. 3. Mexico, D.F.: INOPAL III/Population Council.
- Vernon, R., R. Schiavon, & S. Llaguno** (1998b) "La anticoncepción de emergencia como elemento de la atención a víctimas de violación." Documento de Trabajo No. 1. Mexico, D.F.: INOPAL III/Population Council.
- Well Start** (1998) "Expansion and institutionalization of monitoring system for breast-feeding support." Progress Report in INOPAL III. Quarterly Performance Report of 01/20/98. Washington, DC: Population Council.

IN-REACH FOR PROVIDING MORE PREVENTIVE REPRODUCTIVE HEALTH CARE: LESSONS FROM LATIN AMERICA

RICARDO VERNON C. AND JAMES R. FOREIT

Introduction

Almost all public and not-for-profit health care providers in Latin America provide a range of preventive reproductive and maternal and child health services in primary health care centers. Such services include pre- and post-natal care, family planning, diagnosis and treatment of sexually transmitted diseases (STDs), prevention of breast and cervical cancer, and pediatric services such as vaccination and well baby care. However, many of these services tend to be underutilized, and their existence is often little known among the client population.

Clients tend to seek one service at a time. For example, a mother who brings her child for vaccination may not inquire about family planning even though she may be interested in using a method. Providers, in turn, concentrate on dealing with the presenting problem and tend not to inform clients about, or screen for, preventive services. We hypothesize that several advantages would accrue from better screening, and the provision of more services per client visit. For the client, the number of unmet preventive health care needs would be reduced, and she would spend less time traveling and waiting for services and would accrue fewer transportation and opportunity costs. From the point of view of the organization, comprehensive services may

make it easier to achieve a higher coverage of basic services at lower costs.

In this paper, we review operations research (OR) studies in Guatemala, Mexico and Peru that (1) support the hypothesis that improved client screening (i.e., 'in-reach') will improve program efficiency and effectiveness, and (2) demonstrate successful techniques for improving client screening. A methodological note at the end of this paper presents information on the characteristics of these studies.

Missed opportunities for providing services

An operations research study in Guatemala (Vernon et al. 1997a) conducted exit interviews with 695 women in over 25 health centers to determine clients' unmet need for reproductive health services, desire to use family planning, and knowledge of available services. The women had come to the facilities to obtain a service for themselves or the children who accompanied them.

Table 1 shows that providers miss a very large number of opportunities for providing needed services to *clients present in centers and posts*.

In Guatemala, the most frequently missed opportunity is providing family

TABLE 1
 GUATEMALA: PROPORTION OF WOMEN LEAVING HEALTH CENTERS
 WITH AN UNMET NEED FOR AN AVAILABLE SERVICE

| GROUP | N | PERCENT OF GROUP WITH UNDETECTED SERVICE NEEDED | |
|--|-----|---|-----|
| | | NEED | % |
| Children aged less than one year of women attending center | 268 | Well baby care | 22 |
| Women six or more months pregnant | 110 | <i>Education about:</i> | |
| | | Pregnancy danger signs | 39 |
| | | sing | 60 |
| | | Breastfeeding | 55 |
| | | Family planning | 49 |
| | | Post-partum care | |
| Married women of reproductive age (MWRA) who do not want pregnancy, are not pregnant, are not using a method, and wish to use a method | 164 | Family planning | 100 |

Providers miss a very large number of opportunities for providing needed services to clients present in centers and posts

planning services: of 686 eligible women, 35% were married or in union, not pregnant, did not want a pregnancy and were not using a method. Two thirds of these women (i.e., 25% of all women of reproductive age) said they would like to use a method. Yet, only one received an appointment for family planning services during her visit.

Exit interviews of 574 women visiting 25 health centers in Mexico (Romero, Garcia and Vernon, 1997a) found that 5% of married women of reproductive age had an unmet need for family planning, and that 14% of current contraceptive users were dissatisfied with their methods and were interested in switching. Other missed opportunities were for providing a Pap test (32% of women aged 20 or more years who had never had one); providing breast cancer education (43% of women over 20 years or age said they never self-examined their breasts); and providing STD services

(17% of women said they had had vaginal discharge in the last three years but had not sought medical care).

Lack of client information and screening

Evidence suggests that a lack of consumer knowledge and a lack of screening by providers influences unmet need for services among health center visitors. In Guatemala, approximately 29% of women did not know that family planning services were available and 11% were not aware that well baby care services were offered at the health center. In Mexico, when clients were asked what services were available at the center, nearly one third failed to mention family planning, while services such as prenatal care, cancer prevention, and diagnosis and treatment of STDs were mentioned by less than half of all respondents.

Opportunities to provide services are missed because providers usually limit themselves to giving the service requested, without exploring the clients' need for additional services.

In Guatemala, only 10% of the women interviewed said they had received an additional service; while in Mexico, 34% stated they received an additional service, including education.

In Mexico, Romero, Garcia and Vernon (1997) observed 596 interactions between providers and women of reproductive age. Of these women, 446 attended the health center to receive a service for themselves and 150 for a service for their children. Mexican service delivery norms specify what preventive services should be offered women with different characteristics.

Only a small proportion of potential clients was offered appropriate additional services or asked questions to determine their need for services. In the case of family planning, questions were asked or services offered to only 28% of the 257 women who, according to norms, should have been screened by service providers¹. Women in need of other services were offered them less frequently still: only 16% of eligible women were offered Pap tests, and less than 15% breastfeeding information or services. In the case of the 150 women attending the health center because of their children, only 15% were screened for family planning services, and screening for other services was virtually non-existent.

Nearly one third failed to mention family planning, while services such as prenatal care, cancer prevention, and diagnosis and treatment of STDs were mentioned by less than half of all respondents

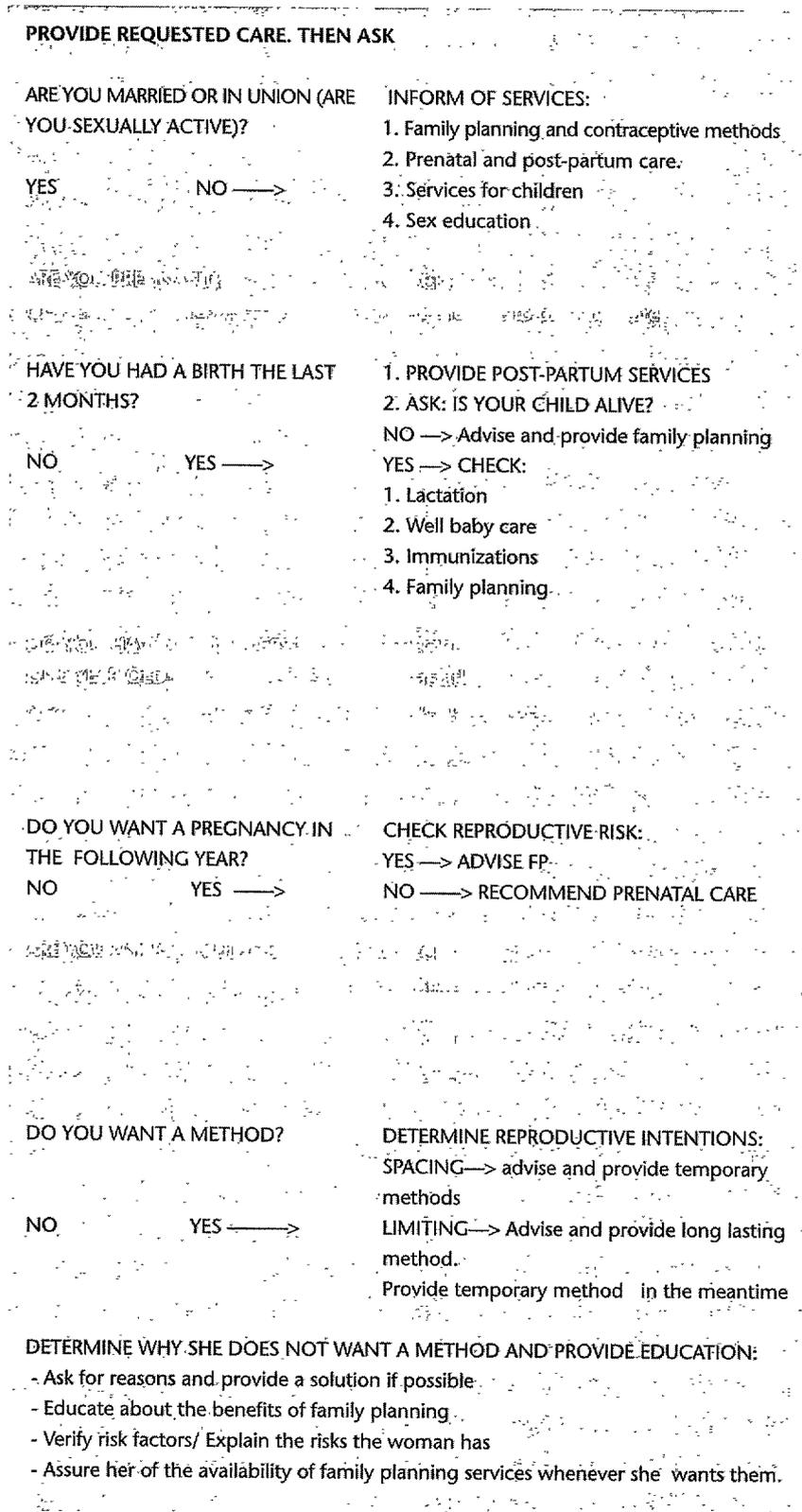
Opportunities to provide services are missed because providers usually limit themselves to giving the service requested, without exploring the clients' need for additional services

Operations research studies to improve client information and screening

Studies have been conducted in Guatemala, Mexico and Peru to increase the number of services provided to clients. In Guatemala and Mexico, simple algorithms were furnished to providers to help them determine if the client needed additional

FIGURE 1

ALGORITHM FOR THE SYSTEMATIC OFFER OF REPRODUCTIVE HEALTH SERVICES



services. In Peru, clients were given a pamphlet, which they discussed with the clinic receptionist which allowed them to determine for themselves if they were in need of any of the additional services offered at the clinic.

Provider Algorithm

Vernon et al (1997a) developed a seven-question algorithm and trained health center staff in its use. Figure 1 presents a copy of the algorithm used in Guatemala. Training of staff in the use of the algorithm was conducted in one or two sessions lasting each between two and four hours.

In Guatemala, health centers and posts were assigned to experimental and control groups (Vernon et al, 1997a). In both groups, service providers received two days of training in family planning. In addition, providers in the experimental group received one-half day training in the use of the algorithm. The number of new family planning users in the experimental group increased by 142%, compared to 81% in the control group. In the control group the increase was due only to new users of injectable contraceptives (which were introduced during the experiment), in the experimental group, there was also an increase in the number of IUD users.

Qualitative interviews with service providers in experimental group health centers and posts showed that the algorithm was not used systematically and was perceived mainly as an instrument to increase the promotion of family planning services. About 34% of the experimental group respondents said they had been given information on contraceptive methods,

compared to 26% in the control group. In the experimental group, providers were also more likely to check for side effects and correct use of the method among current users (Vernon et al, 1997a.). Client exit interviews found no systematic differences between groups on other reproductive health services.

A follow-up experiment (Vernon et al, 1997b) in Guatemala changed training and supervision procedures to encourage providers to use the algorithm for other reproductive health services. A total of 122 health center staff members were retrained in the use of the algorithm. To assess the effectiveness of the training, 72 interactions between providers and clients were observed before and 83 interactions after the training. Screening more than doubled for most service needs. The provision of information also increased dramatically, especially on management of acute respiratory infections and of diarrhea in children. However, in most cases providers gave appointments or referred clients to another service delivery site rather than offering the service at the same visit. In the case of family planning, 43% of all health center users were given an appointment or referred to other services after the training, compared to 19% before.

In Mexico, Loyo and Manuel (1997) conducted four rounds of exit interviews in one clinic to learn if providers using the algorithm increased screening for needed health services. Results showed that more women were offered additional services after training: Offers of immunization for children increased from 4% to 33% of visiting women; offer of well baby services, from 2% to 16%; breast examination, from 8% to 59%; and

family planning, from 2% to 21%. The exit interviews showed that between one half and two thirds of the women who were offered additional services requested further information or accepted one of the services.

A survey found that one third of the clinic's clients wanted these services but did not know they were already available

Client brochure in Peru

INPPARES, a private, non-profit reproductive health service provider, tested the use of a brochure that clients could use to decide if they needed a Pap test, STD treatment or other service (Leon, et al. 1998). Earlier, a survey found that one third of the clinic's clients wanted these services but did not know they were already available. In the experiment, clinic receptionists were trained to give the brochure to all clients and explain its contents using a flip chart. The brochure was tested during ten randomly selected days of one month. The remaining ten working days of the month were used as controls. The purpose of the study was to see if the use of the brochure increased the use of services and the income of the clinic. Only new clinic users during the study period and their revisits during the following 30 days were included in the study in the study.

Experimental group clients received a significantly larger number of services (1.77) than control clients (1.56 services) during their first visit to the clinic

Experimental group clients received a significantly larger number of services (1.77) than control clients (1.56 services) during their first visit to the clinic. Mean payment by experimentals was also 28% higher than the mean payment of controls (US \$ 15.08 in the experimental group vs. US \$ 11.48 in the control group). During the 30 days following the first visit, experimental group clients received 64% more services and paid 68% more for these

Efficiency improvements

A major argument supporting the delivery of integrated services is that it is more efficient to provide more than one service in a single visit than providing the same services in separate visits. In Guatemala and Mexico, the time of interaction between service providers and clients was observed, as well as the number and type of services provided to the clients and the resources used during the interaction. **Table 2** shows that the cost per service decreases with each additional preventive service provided at the same visit.

In Mexico, Pérez-Palacios et al (1997) service adds only 5.2 minutes and the third 6.7 minutes. Thus, each additional service adds only about 30% more client provider contact-time to the visit. The cost of staff time and materials per service increases from US \$ 3.21 for one service, to \$ 4.09 for two services and to \$ 5.20 for three services, i.e., by 27% each time. In Guatemala, providers used only 15% more time when they provided or gave

During the 30 days following the first visit, experimental group clients received 64% more services

services than controls. INPPARES estimated that by using the brochure, the clinic could increase yearly revenues by US \$48,600 while investing only \$6,800 in the brochure and time of the receptionist.

The cost per service decreases with each additional preventive service provided at the same visit

TABLE 2
MINUTES OF INTERACTION BETWEEN CLIENTS AND PROVIDERS BY NUMBER OF SERVICES PROVIDED AND COSTS PER VISIT. MEXICO AND GUATEMALA, 1997.

| Number of services provided during visit | Visits | Minutes of interaction between Clients and Providers | Costs Personnel + Materials (US\$) |
|--|--------|--|------------------------------------|
| | MEXICO | MEXICO | MEXICO |
| 1 | 380 | 17.21 | 3.21 |
| 2 | 135 | 22.39 | 4.09 |
| 3 | 36 | 29.08 | 5.20 |
| 4 | 14 | 27.14 | 5.00 |
| TOTAL | 565 | 19,39 | 3.59 |

information about a second service than when they provided only one service (Brambila and Solórzano, 1998.) In Mexico results indicate that the relationship of decreasing additional time with additional services remains true for both first and subsequent visits (Brambila, 1997.)

Discussion

The purpose of this paper was to review recent operations research projects in Latin America to improve the integration of reproductive health and other services in clinical settings. The data shows that clients frequently leave health centers and clinics without receiving services they need and want. In large part, this happens because service providers do not screen for their clients' needs and do not offer them services to meet these needs. OR results show that

OR results show that instruments designed for clients and providers alike can be effective in increasing the number of total services and services per visit provided to clients

instruments designed for clients and providers alike can be effective in increasing the number of total services and services per visit provided to clients. Increasing total services potentially increases client health status, while increasing services per visit increases service delivery efficiency. The delivery of additional services can also lead to greater revenues, as was shown in the INPPARES study.

In Latin America, it appears that the use of techniques which increase client screening can help programs fulfill the job aids.

References

- Brambila, Carlos.** 1997. Costos de la Atención Integral. Dirección General de Salud Reproductiva, Secretaría de Salud, México. Mimeo based on original analysis of data of Romero, García and Vernon (1997b).
- Brambila, Carlos and Jorge Solórzano** 1998. Costos de las Consultas de Atención Integral en Salud Reproductiva en Guatemala. Documentos de Trabajo, número 7. INOPAL III/ Population Council, Mexico City, Mexico.
- Velásquez, Aníbal; Lisette Jiménez, Adolfo Rechkemer, María E. Planas, Federico León, Rubén Durand and Alicia Calderón.** 1998. Incrementando la Utilización de Servicios de Salud Reproductiva en una Clínica de Lima. Documento de Trabajo número 4. INOPAL III/ The Population Council, Mexico City, Mexico.
- Loyo, Pilar and Magdalena Manuel.** 1997. La Capacitación Como Estrategia Para la Oferta y Provisión de Servicios en Salud Reproductiva en el Hospital General del ISSSTE en Veracruz, Veracruz. In Domínguez, Javier; Marco A. Olaya, Francisco J. Gómez and Ricardo Vernon. 1997. Using Operations Research to Solve Reproductive Health Program Problems. Final Report. ISSSTE and Population Council, Mexico City, Mexico.
- Pérez-Palacios, Gregorio; Lilia Romero, Ricardo Vernon and Cecilia García-Barrios.** 1997. Linking Reproductive Health Services. Summary of Results. Final Report. DGSR/SSA and INOPAL III/ The Population Council. Mexico City, Mexico.
- Romero, Lilia; Cecilia Garcia and Ricardo Vernon.** 1997a. Vinculación de los Servicios de Salud Reproductiva: Encuesta a Mujeres en Edad Fértil Usuarías de Centros de Salud. Octubre. Dirección General de Salud Reproductiva/Secretaría de Salud and INOPAL III, The Population Council. Mexico City, Mexico.
- Romero, Lilia; Cecilia Garcia and Ricardo Vernon.** 1997b. Vinculación de los Servicios de Salud Reproductiva: Observación de la Consulta en Centros de Salud. Octubre. Dirección General de Salud Reproductiva/ Secretaría de Salud and INOPAL III, The Population Council. Mexico City, Mexico.
- Vernon, Ricardo; Emma Ottolenghi, Jorge Solórzano, Luis Roberto Santa-marina, Juan José Arroyo and Clara Luz Barrios.** 1997a. Systematic Offering of Family Planning and Reproductive Health Services in Guatemala. Final Report. Population Council, Guatemala City, Guatemala.
- Vernon, Ricardo; Marianne Burkhart, Jorge Solórzano, Felipe López and Berta Taracena.** 1997b. Systematic Offering of Family Planning and Reproductive Health Services in Guatemala. Addendum to the Final Report for the No-cost Extension Period (April 1 - August 31, 1997). The Population Council, Guatemala City, Guatemala.

Methodological notes on references

The characteristics of the operations research studies discussed in this report are the following. The projects are presented by country in which the study was conducted:

Guatemala/MOH: test of an algorithm and guide: in Quetzaltenango and San Marcos, the Ministry of Health of Guatemala evaluated the use of an algorithm and a manual to train service providers in the delivery of comprehensive reproductive health services. The test was conducted in 12 health centers and 43 health posts and the results compared with those observed in 6 health centers and 25 health posts in a control group. The intervention was evaluated by comparing service statistics for the periods April-December of 1995 and 1996. In addition, 695 exit interviews were conducted with clients of health centers and 31 qualitative interviews with service providers. (Vernon et al, 1997a.)

Guatemala/MOH: in 12 health centers in Quetzaltenango, follow-up training and direct supervision in the use of the algorithm was conducted. Seventy three pre-training and 83 post-training visits were observed by a trainer to evaluate the intervention (Vernon et al, 1997b.)

Guatemala/MOH: Finally, in eight health centers and 32 posts in Quetzaltenango and San Marcos, 553 visits were observed to assess time used by service providers and resources used. Accounting records were used to estimate other indirect and direct costs. The purpose of the study was to estimate the costs of single and integrated visits (Brambila et al, 1998.)

México/ISSSTE: the Institute for Social Security and Services for State Workers conducted an evaluation in one large clinic in Veracruz of the training in the use of an algorithm to promote the delivery of comprehensive reproductive health services. The impact of the training was evaluated by means of a baseline survey in which 399 exit interviews of women of reproductive age were conducted, and three monthly follow-up post-training surveys of 100 interviews each (Loyo and Manuel, 1997.)

Mexico/MOH: the Ministry of Health of Mexico conducted interviews with 224 providers, exit interviews with 574 women of reproductive age, and observed 596 client-provider interactions in 25 health centers in eight states in Mexico to assess the way in which reproductive health services were delivered. These observations also allowed for estimates of some direct costs of service delivery of reproductive health services (Pérez-Palacios et al, 1997; Romero, García and Vernon, 1997a and 1997b; Brambila, 1997.)

Perú/INPPARES: the IPPF affiliate in Peru tested the use of an algorithm in one clinic in Lima to help clients identify services they needed. The algorithm was used in 10 days randomly selected in a month, and the remainder 10 days were used as a control. With service statistics, INPPARES observed the number of services consumed and fees paid by new users, both in the day of their first visit, and in the following 30 days (León et al, 1998.)

POSTABORTION CARE IN LATIN AMERICA: A SUMMARY OF OPERATIONS RESEARCH

TIMOTHY KING, DEBORAH BILLINGS, ALISON FRIEDMAN, JANIE BENSON¹

I n t r o d u c t i o n

Each year an estimated 585,000 women worldwide die from complications related to pregnancy and childbirth, most importantly unsafe abortion, hemorrhage, obstructed labor, sepsis, and hypertensive disorders (World Health Organization, 1996a). Ninety-nine percent of the women are from the Southern Hemisphere or developing countries. Millions more suffer the short and long-term consequences of such complications, including infection, infertility, and chronic pain. Unsafe abortion refers to the termination of pregnancy performed by unskilled providers as well as the inadequate treatment of spontaneous abortion (World Health Organization, 1994). It contributes significantly to the morbidity and mortality of

high as 60 percent (AbouZahr, 1996; World Health Organization, 1994; Tinker and Koblinsky, 1993).

The pattern is the same throughout Latin America, where unsafe abortion accounts for 24 percent of all maternal deaths (World Health Organization, 1994). An estimated 800,000 women seek treatment for abortion complications each year at public hospitals throughout the region (Singh and Wulf, 1994). However, most mortality and morbidity figures underestimate the impact of unsafe abortion on women's health since they tend to exclude women suffering from complications related to spontaneous abortion and do not include women who do not present themselves to formal public health services.

Since the 1994 International Conference on Population and Development (ICPD), the postabortion care (PAC) model has been widely recommended as a strategy for breaking the cycle of repeat abortions and helping to reduce maternal morbidity and mortality by improving services provided to patients with complications from spontaneous or unsafely induced abortion. Postabortion care incorporates three interrelated and essential services for all patients treated for abortion complications. These are:

Globally 13 to 14 percent of all pregnancy-related deaths, 75,000 to 80,000 women, are attributable to unsafe abortion. In Latin America unsafe abortion accounts for 24 percent of all maternal deaths

reproductive age women throughout the world. Globally 13 to 14 percent of all pregnancy-related deaths, 75,000 to 80,000 women, are attributable to unsafe abortion while in some settings this figure rises to as

- 1) emergency treatment services for complications of spontaneous or unsafely induced abortion;
- 2) postabortion contraceptive counseling and method provision; and,
- 3) links between emergency abortion treatment services and comprehensive reproductive-health care (adapted from Greenslade, et al., 1994).

Implementation of PAC services throughout Latin America has taken place at a steady pace since 1993 and numerous lessons have been learned from the varied experiences of patients, providers and policymakers. Operations research (OR) projects sponsored by the United States Agency for International Development/ INOPAL III contract, as well as several other funding agencies including the Bergstrom Foundation, European Union, and the World Bank, have evaluated PAC in terms of resource use and quality, availability, and accessibility of services. These OR studies have been particularly useful in engaging health systems in a process to identify the strengths and challenges of providing quality PAC services. Overall, OR studies have facilitated the development of PAC service delivery models that can be modified according to the needs of patients and providers and replicated from setting to setting.

In this chapter, we highlight the nine PAC OR studies conducted in Latin America funded under INOPAL III. Non-

INOPAL III studies are also reviewed where relevant to the following themes:

- 1) clinical practices;
- 2) counseling provided to PAC patients, including the quality of the patient-provider interactions;
- 3) postabortion contraceptive counseling and method provision; and,
- 4) costs and resources used in the provision of PAC services.

Clinical Practices refers to the protocols and procedures followed when treating incomplete abortion arising from spontaneous or unsafely-induced abortion, including the specific procedure used for uterine evacuation (generally sharp curettage (SC) versus manual vacuum aspiration (MVA)), infection prevention, and pain management. Clinical practices also address the organization of services, noting whether patients are treated on an inpatient or outpatient basis and whether the procedure is performed in an operating theater or a procedure room. The Information versus Counseling section examines whether providers identify the concerns of post-abortion patients and appropriately inform them about their diagnosis, treatment, and proper care after leaving the facility. The section on Post-abortion Contraception outlines the ways in which a patient's reproductive needs and intentions are addressed. Finally, we present a summary of findings regarding the Costs and Sustainability of providing emergency services for incomplete abortion. Most studies reviewed in this chapter address each of these themes. This review is based on information from published and unpublished reports, although when feasible we also contacted study investigators for supplemental information.

OR studies have facilitated the development of PAC service delivery models that can be modified according to the needs of patients and providers and replicated from setting to setting

Methods

In general, OR studies are intended to measure the effect of an intervention (Fisher, et al., 1991), although some studies reviewed here were cross-sectional assessments designed to gauge the feasibility (physical, economic, social, and/or political) of future PAC interventions (Friedman, et al., 1998b; Orellana, et al., 1996). Table 1 describes a selection of nine PAC OR studies funded under INOPAL III that have been completed in Latin America since 1993, although many other PAC OR studies have also been conducted (Díaz, et al., 1998; Langer, et al., 1997; Abernathy, et al., 1996; Orellana, et al., 1996; Rogers, 1995; Johnson, et al., 1993a; Johnson, et al., 1993b; Cuarto, 1993).

Study designs were generally non- and quasi-experimental and all utilized non-randomized convenience samples of providers or patients (Benson, et al., 1998; Brambila, et al., 1998a; Díaz, et al., 1998; Fuentes Velásquez, et al., 1998; Langer, et al., 1997; Abernathy, et al., 1996; Rogers, 1995; Cuarto, 1993). It is unclear whether sample size and power calculations were considered in the study designs as few authors addressed these issues in their reports. Two studies involved repeat assessments: a study in three public hospitals in Bolivia which featured repeat assessments of independent samples at approximately six, 12 and 18 months post discharge; and the Mexico City-Instituto Mexicano de Seguro Social (IMSS) study, which featured a static-group comparison design and follow-up of patients at 1 week and 6 months post-procedure (Díaz, et al., 1998; Fuentes Velásquez, et al., 1998). A mixture of qualitative and quantitative methods

TABLE 1
SELECTED INOPAL III PAC OR STUDIES
IN LATIN AMERICA, BY COUNTRY.

| Country | Year(s) | Sites | n* | Description |
|-----------------------|---------|-------|-----|---|
| Bolivia ^a | 1998 | 12 | 64 | |
| Bolivia ^b | 1997-98 | 4 | 64 | Opinion survey of 64 policymakers', providers', and administrators' views of MVA, factors contributing to maternal mortality and morbidity, and feasibility of introducing MVA in Bolivia |
| Honduras ^c | 1997 | 1 | 100 | |
| Mexico ^d | 1995-97 | 1 | 36 | Cost and resource-use study of MVA and SC in Oaxaca |
| Mexico ^e | 1997-98 | 6 | 803 | |
| Mexico ^f | 1997 | 4 | 70 | Baseline assessment of quality and costs of PAC services prior to the introduction of MVA. Study sites are four of the largest regional ISSSTE hospitals** |
| Peru ^g | 1996 | 1 | 15 | |
| Peru ^h | 1996-98 | 1 | 204 | Pre-post intervention study measuring quality of care, clinical competence, infection prevention, pain management, IEC, and contraceptive counseling* |

*n represents number of patients except where otherwise noted under "Description"

** INOPAL III-funded baseline OR of AVSC intervention project

^aFriedman, et al., 1998a; ^bFriedman, et al., 1998b; ^cMedina and Mendoza Gutierrez, 1998; ^dBrambila, et al., 1998a; ^eFuentes Velásquez, et al., 1998; ^fBrambila, et al., 1998b; ^gGárate, et al., 1997; ^hBenson, et al., 1998

were employed. Data collection instruments used included structured and semi-structured questionnaires, logbook reviews, case record forms, and observation checklists, while results from focus group interviews of patients and facility staff were reported in one study in Peru (Gárate, et al., 1997). Cost and resource use studies typically incorporated observations of patients from arrival to discharge (time-motion studies) and included only patients presenting with incomplete abortion, unaccompanied by other complications such as septicemia or uterine perforation (Benson, et al., 1998; Brambila, et al., 1998a; Brambila, et al. 1998b; Friedman, et al., 1998a; Fuentes Velásquez, et al., 1998; Abernathy, et al., 1996; Rogers, 1995; Johnson, et al., 1993a; Johnson, et al., 1993b; Cuarto, 1993). Cost and resource use study methodologies have been thoroughly described elsewhere (Abernathy, et al., 1993; King, et al., 1998a).

Data analysis often consisted of simple and stratified means and frequencies with qualitative interpretations of clinical significance. A few studies reported T-tests and Chi-squares (Benson, et al., 1998; Friedman, et al., 1998a; Langer, et al., 1997), and at least one study report included regression analyses (Langer, et al., 1997). The interpretation of inferential statistics in these studies is difficult to gauge considering the lack of reported sample-size or power calculations. A comprehensive review of PAC OR methodology is beyond the scope of this chapter, but several resources provide a more complete treatment of the subject (King, et al., 1998b; World Health Organization, 1996b; Fisher, et al., 1991).

To ensure protection of human subjects, all INOPAL III study protocols were reviewed by the Population Council's Ethics Review Committee and many protocols were further reviewed by medical committees at each study site. As the reports reviewed here generally do not discuss protocol review procedures, it is unknown whether every study in **Table 1** underwent a formal review process to address ethical issues. Anecdotally, most if not all researchers relied on verbal informed consent when recruiting patients and providers into the studies.

As with any research, each of the studies described here had strengths and weaknesses in design, implementation, and analysis. A review of the reports shows that some common traits exist across all PAC OR in Latin America to date. Perhaps the greatest strength of these OR projects is the breadth and depth of the issues they address. Each major substantive area of PAC ORóclinical practices, IEC, contraceptive counseling, and costs and sustainability was examined in multiple settings and countries. Most studies employed a pre-post intervention design, arguably a better design than static-group comparison, for evaluating the impact of an intervention (Fisher, et al., 1991). However, some methodological weaknesses were exhibited throughout several studies. Few reports reported sample-size or power calculations to help validate inferential statistics when they were used. Additionally, few studies attempted to collect any information about patients who refused to or could not participate in the study, thereby presenting a potential source of bias.

Results and Discussion

Postabortion care OR studies in Latin America, both INOPAL III and other studies, consistently have reported similar results across the four areas highlighted for discussion in this paper.

Most studies included a PAC intervention component. The key elements of a PAC intervention typically included some or all of the following: 1) consensus-building among policymakers, administrators, and providers; 2) reorganization of services; 3) in-service PAC training for providers; and, 4) workshops for administrators and service staff to orient them to new PAC services. Reorganization of services refers to moving treatment services for patients with uncomplicated incomplete abortions from the operating theater to a procedure room and reclassifying PAC as an outpatient service when clinically appropriate. In-service training generally included use of MVA, infection prevention, pain management, discussing patient-provider interactions, and post-abortion contraceptive counseling and method provision.

Clinical Practices

Most PAC OR studies, particularly when an intervention is involved, have a component documenting changes in clinical practices. Clinical practices refer to the implementation of protocols followed by facility staff when treating patients presenting with incomplete abortion. The major component of clinical practices is the specific technique used: SC or MVA (and in one study, electric vacuum aspiration (EVA)) (Rogers, 1995). Treatment protocols should also address infection prevention, pain control, and organization of facility services.

The key elements of a PAC intervention included: 1) consensus-building among policymakers, administrators, and providers; 2) reorganization of services; 3) in-service PAC training for providers; and, 4) workshops for administrators and service staff to orient them to new PAC services

Treatment Technique

Studies already have documented that MVA is safer than and as effective as SC when used for treating incomplete abortion at 12 weeks or less uterine size (Baird, et al., 1995). Consequently, a goal of many of the OR studies in Latin America was to demonstrate ways in which MVA could be introduced into a health care facility or system to decrease use of SC for the emergency treatment of incomplete abortion.

Overall, the pre-post intervention studies demonstrated that, in most settings, MVA can be successfully incorporated into PAC services with the support of clinical and administrative staff. In both Oaxaca, Mexico and Peru, SC was used in 100 percent of cases before the PAC intervention, while in the post-intervention phase, 78 percent and over 90 percent of appropriate cases were treated with MVA in Oaxaca and Peru, respectively (Benson, et al., 1998; Langer, et al., 1997). In the Peru study, introduction of MVA was an integral component of the reorganization of services, where the uterine evacuation procedure was moved from the operating theater to a PAC procedure room located in the obstetrics-gynecology emergency room. A growing body of evidence suggests reorganization of services is a critical

The pre-post intervention studies demonstrated that, in most settings, MVA can be successfully incorporated into PAC services with the support of clinical and administrative staff

component in improving emergency treatment for incomplete abortion (Benson, et al., 1998; Díaz, et al., 1998; Johnson, et al., 1993b).

Researchers have not routinely evaluated procedure-related complications. The studies that have collected these data generally reported that frequency of procedure-related complications for MVA was the same or lower when compared to SC, usually less than one percent of procedures (Fuentes Velásquez, et al., 1998; Langer, et al., 1997; Abernathy, et al., 1996). However, estimates of procedural complications should be interpreted cautiously as in emergency settings it is often difficult to distinguish between injuries and infections arising from the original induced or spontaneous abortion from those resulting from the postabortion uterine evacuation procedure.

In most public health facilities and systems in Latin America, SC with general anesthesia or heavy sedation is the standard protocol used for uterine evacuation as it is taught in medical schools and used in most teaching hospitals. Although numerous studies have documented the advantages of reorganizing services and using MVA instead SC for eligible patients, considerable barriers exist to the introduction of the PAC model with MVA for the emergency treatment of incomplete abortion. Many providers perceived SC to be an efficient

and safe technique for treatment of incomplete abortion and therefore were resistant to adopting a new technology. Also, providers have stated that using general anesthesia should result in less pain for the patient during the procedure even though the use of general anesthesia is less safe than other forms of anesthesia. In contrast, some researchers have reported that providers preferred to treat patients under general anesthesia because the patients were unconscious, thus saving the provider from having to interact with the patient at all during the procedure. Nevertheless, many providers and policymakers have used the results of PAC OR to overcome these barriers and have accepted the PAC model using MVA. For example, a semi-structured interview of providers, hospital administrators, and policy-makers in Bolivia reported that 89 percent supported pilot-testing PAC with MVA (Friedman, et al., 1998b). In Latin America, the data show that the PAC model can be successfully introduced, but only when political, institutional, and social support are present.

Infection Prevention

In addition to changing the treatment technique for uterine evacuation, evaluating related practices such as infection prevention was an important feature of several studies (Benson, et al., 1998; Friedman, et al., 1998a; Fuentes Velásquez, et al., 1998; Medina and Mendoza Gutierrez, 1998; Langer, et al., 1997). Infection prevention practices include hand-washing, use of gloves, decontamination and high-level disinfection or sterilization of medical instruments, and appropriate disposal of biohazardous waste.

Appropriate infection prevention protocols are well established (Tietjen, et al., 1992), yet studies universally report that infection prevention practices are inadequate. Only the Peru project reported directly observing infection prevention practices and, while practices improved somewhat after the intervention, this area remained problematic (Benson, et al., 1998). Anecdotal reports from other studies suggest that infection prevention practices consistently did not adhere to internationally accepted protocols.

Pain Management

Several studies examined patient's perceptions of physical pain and pain management throughout the PAC process (Benson, et al., 1998; Friedman, et al., 1998a; Fuentes Velásquez, et al., 1998; Medina and Mendoza Gutierrez, 1998; Langer, et al., 1997; Gárate, et al., 1997). It is important to note that pain measurement is very subjective and thus comparisons across studies in which patient populations are quite different must be made carefully. Most studies in this review focused on measuring the intensity of pain felt by patients throughout their care by asking them to rate pain using an 11-point scale, where zero represented "no pain" and ten represented the "worst pain ever experienced" or the "worst pain imaginable". The Mexico City-IMSS study expanded evaluation of pain to include patients' descriptions of the location and type of pain they felt as well as their emotional state throughout the process of care (Fuentes Velásquez, et al., 1998). In all cases, data on patients' perceptions of pain were collected during an interview conducted prior to discharge from the

hospital such that patients were asked to recall the pain experienced at different stages during their stay in the hospital.

Overall, patients reported decreases in pain intensity from the time of entry to the time of discharge from the facility (Table 2). Interestingly, in the Mexico-IMSS study patients treated with MVA reported a more rapid decline in pain intensity than did patients treated with SC, presumably due to differences in being treated with suction versus a sharp curette. In the IMSS hospitals, patients treated with MVA were given paracervical blocks. In contrast to the Mexico City-IMSS study, patients treated with SC and MVA in Peru reported equally low levels of post-procedure pain. In Peru, potential differences between the two techniques may have been masked by extensive use of heavy sedation for MVA patients.

Pain management protocols refer not only to those used during the procedure but also to those employed in the pre- and post-procedure periods. Pain should be managed according to generalized protocols that are applied to each patient according to her specific needs. In general, use of light sedation and supportive interaction with the medical team poses fewer health risks to the woman, while adequately managing her pain, than does the use of heavy sedation or general anesthesia. As noted in Margolis et.al (1993), "the objective of pain management is to ensure that the woman suffers the minimum of anxiety and discomfort as well as the least risk to her health". Achieving this balance is a challenge for every health care provider.

Data on pain management in the reviewed studies were gathered through

observation and review of case record forms. Studies typically reported pain medications in classes (general or local anesthesia, light or heavy sedation, analgesia) rather than the actual medications, doses, and routes provided. Pain management practices tended to be uniformly inadequate during the pre- and post-procedure periods, where providers rarely asked patients about their pain and rarely or never provided pain medications. In the Mexico City-IMSS and Peru studies, 60 and 88 percent of patients reported feeling pain as they waited to enter the procedure room, respectively, yet none received analgesia to relieve their discomfort (Benson, et al., 1998; Fuentes Velásquez, et al., 1998). This may be related to several factors, including patient's reluctance to verbally express their pain and providers' traditional focus on controlling pain during the uterine evacuation procedure with little to no attention paid to pain. In patients may experience before or after the procedure. One exception was reported in the Oaxaca, Mexico study where, even during the pre-intervention stage, 93 percent of patients waiting for the procedure were asked whether they were in pain and 26 percent received analgesia (Langer, et al., 1997).

Although providers in Peru reported that pain management was inadequate, particularly while patients were waiting to be treated (Gárate, et al., 1997), patients in the Peru study reported decreasing levels of pain intensity between the waiting room and the recovery area (Benson, et al., 1998). These pain estimates were similar to those reported in the Mexico City-IMSS study, although the patients in the IMSS study appeared to report higher levels of pain at

the time of the patient exit interview relative to the patients in the Peru data (Table 2) (Fuentes Velásquez, et al., 1998).

Also, in the Peru study, patient reports of pain intensity during the pre-procedure waiting period were significantly lower, 5.8 and 4.2 for pre- and post-intervention, respectively ($p < .05$). Providers theorized that reduced waiting times before the procedure (5.2 hours and 2.9 hours for the pre- and post-intervention, respectively) and proportionally more contact time with staff may have influenced the patient's recall of pain intensity at the exit interview.

TABLE 2
MEAN INTENSITY OF PAIN REPORTED BY PATIENTS:
PERU AND MEXICO CITY-IMSS*

| Variable | Peru | Mexico-IMSS |
|----------------|----------------|-------------------|
| | MVA (n=102) | SC PAC (n=270) |
| Pre-procedure | 4.2 | 6.4 |
| Post-procedure | 1.4** | 5.0 |

*Pain intensity reported on a Likert-type scale from 0 (no pain) to 10 (worst pain)

** $p < .05$ when comparing the reporting of pain intensity pre- versus post-procedure

As expected, MVA patients who received light sedation and/or local anesthesia reported procedural pain versus SC patients who were heavily sedated or unconscious during the procedure and therefore were less likely to report procedural pain (Medina and Mendoza Gutierrez, 1998; Benson, et al., 1998). The moderate levels of pain intensity reported by patients treated with MVA in Peru and Honduras support greater efforts to ensure that patients experience minimal pain while avoiding increased risks of complications associated with heavy sedation and general anesthesia.

As noted earlier, most of the INOPAL OR studies involved an intervention component that included introducing MVA as an alternative to SC for eligible patients. Providers, in general, were already trained and familiar with using SC under general anesthesia or heavy sedation while few had sufficient experience utilizing MVA in combination with local anesthesia, light sedation, and/or supportive counseling. In the Honduras study, 43 percent of patients received general anesthesia or were sedated to the point of unconsciousness during the procedure even though an unreported proportion of these patients were treated with MVA and most likely did not require this pain control regimen (Medina and Mendoza Gutierrez, 1998). Similarly, in Peru, even after an intervention that included a component on pain management in addition to MVA training, 75 percent of MVA patients continued to be heavily sedated (Benson, et al., 1998). Perhaps the most substantial improvements in pain management during the uterine evacuation procedure were reported in the Mexico-Oaxaca study, where the frequency of general anesthesia fell from 91 to 30 percent of procedures, while use of paracervical block rose from one to 59 percent when comparing pre- and post-intervention data (Langer, et al., 1997).

Modifying pain management practices to move away from general anesthesia or heavy sedation to paracervical block, analgesia and/or light sedation requires that physicians, nurses, and anesthesiologists take on new support roles if pain is to be managed adequately. Patient's varying reports of pain during the MVA procedure indicate that providers should continue to

strengthen their skills in identifying the needs of individual patients, communicating in a manner relaxing to the patient, and providing a combination of local anesthesia, analgesics and/or anxiolytics.

Information versus Counseling

Two integral components for ensuring quality of PAC services are: 1) patient information and counseling; and, 2) interaction between healthcare providers and patients (Greenslade, et al., 1998). Both must be approached in ways that orient patients to their health status, make them feel respected and supported, and

Modifying pain management practices requires that physicians, nurses, and anesthesiologists take on new support roles

provide them with the opportunity to have their questions adequately addressed. If patients leave the health facility with fewer doubts about their health, a sense that the providers are there to help rather than chastise, and skills in how to care for themselves after the abortion experience, then perhaps they will be more likely to recover and return for follow-up services.

However, providers in general have not emphasized the need to identify with the expectations and concerns of PAC patients nor have they focused on high quality counseling, rather than information provision, as important to the overall services offered to patients. "Counseling" is defined as a process of interaction between the provider and patient through which the patient is able to understand her condition and to make decisions according to her needs and expectations. This differs from

Counseling for PAC patients should include information on a patient's health status, clinical procedure, possible post-procedural complications, recommendations regarding hygiene, return to routine activities

information provision whereby such needs and expectations may not be taken into account as the provider directs a pre-structured message to the patient. Counseling for PAC patients should include information on a patient's health status, clinical procedure, possible post-procedural complications, recommendations regarding hygiene, return to routine activities, contraceptive choices, and other related reproductive and sexual health issues.

Patients arriving at health facilities with abortion complications traditionally have been chastised, stigmatized, and relegated as less important than other patients (Díaz, et al., 1998; Gárate, et al., 1997; Rance, 1993). Although patients perceived as having had an induced abortion have been singled-out for harassment, such as being charged more for services, anecdotal reports suggested that patients presenting with spontaneous abortions often fared no better. Introducing counseling into a model of PAC services, therefore, is groundbreaking for many providers and health care systems and presents challenges to those unaccustomed to incorporating the actions and

demeanor necessary to provide patients with comprehensive care.

In two of the studies reviewed in this chapter (Mexico-Oaxaca and Peru), training interventions were implemented in order to improve counseling (Benson, et al., 1998; Langer, et al., 1997). In the third study (Mexico City-IMSS), existing models of care that incorporated counseling were compared to the standard model of care that simply presents patients with information (Fuentes Velásquez, et al., 1998).

Results from the studies reviewed in this chapter vary somewhat in terms of the impact of the intervention introduced. In Mexico-Oaxaca, the training of hospital staff, in particular nurses and social workers, had a strong positive effect on the interpersonal communication processes between medical staff and the postabortion patients. For example, the percentage of patients receiving information about their health status before entering the procedure room increased from 68 to 87 percent ($p < .05$) as did the percentage of patients who knew the name of the doctor performing the procedure (pre: 17%, post: 74%; $p < .05$). While virtually no patients received information about post-procedural recovery, potential problems, and where to seek care in case of problems during the baseline phase, one-half of all patients were told about possible complications and where to go after the intervention (Langer, et al., 1997). Providers noted a change in their own attitudes after participating in workshops focused on interpersonal relations. As one noted, "We can do it if we set our minds to it because our excuse has always been the lack of time. It is possible to chat with the patient and give her information in only

Providers noted a change in their own attitudes after participating in workshops focused on interpersonal relations

a couple of minutes, while we are getting ready to perform a procedure” (Langer, et al., 1997).

In addition to observing patient counseling, the Peru study also asked patients to recall counseling they received (Benson, et al., 1998). Results were somewhat mixed in the post-intervention phase as a significantly greater percentage of patients recalled receiving information about when to return to their daily activities and when their menstrual period would return after the intervention ($p < .05$). Fewer patients, however, recalled being told of the need for personal hygiene, signs of possible post-procedural complications, and the need to delay sexual intercourse. Supervisors of the new postabortion services attributed the deficits to the staff's perception that the ambulatory patients assessed in the post-intervention phase needed less comprehensive information than did patients in the pre-intervention phase who were hospitalized and seen as more “ill” (Benson, et al., 1998). Some results from the PAC study in Honduras were promising in that, before any PAC intervention, 80 percent of patients were told about their return to fertility, when their menstrual period would return, and when to resume normal life activities. Almost no patients in the Honduras study, however, were able to identify the signs and symptoms of possible post-procedural complications (Medina and Mendoza Gutierrez, 1998).

In the Mexico City-IMSS project, patients treated according to models where counseling was a standard part of services (MVA PAC, SC PAC) reported greater confidence in hospital staff, perceived that staff identified their concerns, and felt that staff helped them to address their concerns,

than did patients treated in the SC Standard model of care where only minimal information was provided. Patients treated according to PAC models also received more information about their health status than did patients treated in the SC Standard model of care. A significantly higher proportion of patients treated with MVA received information about the uterine evacuation procedure than did those treated with SC (53% were sufficiently informed vs. 10% and 3%; $p < .05$). Disappointing was the overall low proportion of patients (2%- 41% across all three models) who received information about possible post-procedural complications and return to normal life activities. Despite the low figures, the PAC models that included counseling generally showed better results than did the SC Standard model that did not include counseling as part of the standard package of services.

Overall, providing high-quality counseling to patients treated for abortion complications presents challenges for service providers unaccustomed to identifying patients' concerns and needs and providing these patients information to help improve their future reproductive and sexual health. Postabortion care training workshops and follow-up supervision should continue to stress counseling so that providers can understand its importance, recognize that it does not require a great deal of additional time with a patient, and become more proficient in providing adequate counseling throughout the postabortion care process.

Postabortion Contraception

Postabortion contraceptive counseling is one of the three central components of the PAC model of services that should be

Postabortion contraceptive counseling should be delivered to all patients arriving at health facilities with abortion complications. Providers should ask patients whether they want to become pregnant again soon and follow-up with counseling tailored to the patients' desires

delivered to all patients arriving at health facilities with abortion complications (Greenslade, et al., 1994). Providers should ask patients whether they want to become pregnant again soon and follow-up with counseling tailored to the patient's desires. Patients can then make a fully informed choice about accepting or continuing contraceptive use. Patients who have had either an induced or spontaneous abortion may be good candidates for a contraceptive method. Regardless of the cause of the abortion, patients should not return to their homes without a thorough understanding of the rapid return to fertility and the benefits, risks, and secondary effects of a range of contraceptive methods. As data show that patients often do not return for referral appointments, patients who do not want to become pregnant in the short or long term should receive a method before leaving the area where they were treated for incomplete abortion (Solo, et al., 1998).

Health care providers who included contraceptive counseling in the repertoire of services offered to patients found that additional time was not added either to their interactions with patients or to the length of the patient's stay in the hospital

In Peru, obstetricians provided contraceptive counseling. Obstetricians, also called *matronas* in some Latin American countries, are university-trained midwives who complete a five-year theoretical and practical training program and provide the bulk of reproductive health services in some countries. In Mexico and Honduras, physicians actually treating the woman for incomplete abortion and social workers were the main cadre of providers offering contraceptive services, including counseling. Overall, health care providers who included contraceptive counseling in the repertoire of services offered to patients found that additional time was not added either to their interactions with patients or to the length of the patient's stay in the hospital. Instead, they used their time with the patient more efficiently to offer an important service (Benson, et al., 1998; Brambila, et al., 1998a; Fuentes Velásquez, et al., 1998).

Facilities in Bolivia, Honduras, Mexico (excluding IMSS facilities), and Peru generally did not include contraceptive counseling and method provision as part of the standard services offered to patients after their treatment for incomplete abortion (Benson, et al., 1998; Díaz, et al., 1998; Medina and Mendoza Gutierrez, 1998; Langer, et al., 1997). In fact, it is common throughout the world that emergency treatment services are not linked to contraceptive services such that patients who desire to avoid or delay pregnancy often leave the health facility without information and a contraceptive method. Reasons can include the physical and administrative separation between the ward or area where emergency treatment

services are provided and on-site family planning clinics, limited accessibility to contraceptive methods for staff not working in the family planning clinic, minimal staff knowledge about postabortion contraception, and in general the lower priority given to postabortion patients.

When emergency treatment services were linked explicitly to postabortion contraceptive counseling and method provision, a significantly greater proportion of patients were presented with a range of methods, received information about them, and actually received a contraceptive method before leaving the hospital (Table 3). Note that the SC PAC model was left out of the table so that the Mexico City-IMSS study could be compared directly with the other studies in which pre-intervention is similar to SC Standard services and post-intervention is similar to MVA PAC services. The SC PAC model found that 77 percent of patients received a contraceptive method prior to discharge from the hospital, a figure comparable to the MVA PAC model of 63 percent ($p=n.s.$). This finding suggests that incorporating contraceptive counseling into PAC services is more important than the clinical technique used for uterine evacuation when evaluating contraceptive acceptance (Fuentes Velásquez, et al., 1998).

The Mexico City-IMSS project was unique in that it included a component that examined the prevalence of contraceptive use over time. Patients treated for incomplete abortion were asked to return to the hospital at 7-days post-discharge for a follow-up exam and interview. Patients who agreed to participate but did not return to the hospital were interviewed by

When emergency treatment services were linked explicitly to postabortion contraceptive counseling and method provision, a significantly greater proportion of patients were presented with a range of methods, received information about them, and actually received a contraceptive method before leaving the hospital

TABLE 3
PERCENTAGE OF POSTABORTION PATIENTS RECEIVING A CONTRACEPTIVE METHOD BEFORE DISCHARGE FROM THE FACILITY. DATA FROM FOUR STUDIES*

| Location of Study | Pre-Intervention % (n) | Post-Intervention % (n) |
|-------------------|------------------------------|----------------------------|
| Oaxaca, Mexico | 29.5 (136) | 59.7** (207) |
| Mexico City-IMSS | SC Standard 36.5 (282) | MVA PAC 63.3** (251) |

*Pre- and post-intervention in Peru and Oaxaca, Mexico; MVA PAC model and SC Standard model in Mexico City; Post-intervention data only available from Honduras study.

** $p < 0.05$

phone or in person in their homes, after providing informed consent to the interviewer. Patients completing the 7-day follow-up interview were then asked to participate in a 6-month follow-up interview conducted in their homes or by phone (Fuentes Velásquez, et al., 1998). It should be noted that following patients over time is difficult and, similar to other PAC OR follow-up studies (Johnson, et al. 1998), the Mexico City-IMSS study reported high loss-to-follow-up rates. High loss-to-follow-up

TABLE 4
PREVALENCE OF CONTRACEPTIVE USE AT THREE TIME PERIODS:
ANY METHOD: MEXICO CITY-IMSS STUDY

| Time of Interview | MVA PAC % (n) | SC PAC % (n) | SC standard % (n) |
|-------------------|------------------|-----------------|----------------------|
| Discharge | 63.3 (251) | 76.7 (270) | 36.5 (282) |
| 6 months | 52.6 (97) | 50.0 (126) | 16.1 (130) |

may introduce bias into contraceptive continuation rates, as researchers have no means to determine whether patients who drop out of a study continue to use a method or not.

Both the frequency of acceptance and continuation of all methods were significantly higher in models where counseling was included as part of the standard services offered to patients (Table 4). A greater proportion of patients received a method when treated in models where counseling was part of the standard services (MVA PAC: 63%; SC PAC: 77%; SC Standard: 36%). At 7-days post-discharge interview, equal proportions of women in each model reported using a contraceptive method. At 6-months post-discharge, significantly more women treated in the MVA PAC and SC PAC models were using a contraceptive method, relative to women treated in the SC Standard model. However, the actual decrease in the percentage of women using a method from 7-days to 6-months after leaving the hospital is much less for those treated in the MVA PAC model versus the SC PAC model.

While the Mexico City-IMSS study followed patients through six months post-discharge to assess contraception continuation rates, a study in three public hospitals in Bolivia repeated measures at approximately

12 and 18 months to assess whether increases in contraceptive acceptance rates were sustainable. By integrating contraceptive counseling into emergency treatment services, contraceptive acceptance rose from 0-10 percent in the three hospitals to approximately 20-70 percent and remained stable more than one-year later (Díaz, et al., 1998).

One problem with the standard method for calculating the frequency of contraceptive acceptance is that the method does not account for the actual number of women who desire to use a method. For example, if a hypothetical 100 patients were treated for incomplete abortion and 60 accepted a contraceptive method, then contraceptive acceptance traditionally would be calculated as 60/100, or 60%. However, let us assume that a number of the 40 non-acceptors either already were using another method (5 patients) or desired to become pregnant again in the near future (15 patients). This leaves a total of 80 patients as potential contraceptive acceptors. A more meaningful estimate of the effectiveness of postabortion contraceptive services would then be the number of acceptors divided by the total number of patients desiring contraception. In our hypothetical example, the proportion of patients desiring contraception who received a method would be 60/80, or 75%, as opposed to the 60% estimate of contraceptive acceptance when calculated in the standard practice. In effect, not accounting for current contraceptive use or a desire for an immediate pregnancy when evaluating contraceptive acceptance has resulted in an underestimate of the effectiveness of post-abortion contraceptive method provision.

Overall, each of the studies reviewed in this chapter found that systematically linking contraceptive services with the emergency treatment of incomplete abortion was vital to ensuring that patients who desire to prevent or delay pregnancy left the hospital with information about how to do so. Reports also suggest that PAC training must emphasize that method provision should always take place in accordance with the needs and consent of each patient. When such services were offered, more patients left the hospital with a contraceptive method and continued to use the method over time. Nevertheless, integration of contraceptive services into emergency care treatment was challenging in Honduras and Oaxaca, Mexico as staff responsibilities for contraception services outside the outpatient clinic were not well defined and contraceptive commodities were not usually kept in the same area where emergency services were offered (Medina and Mendoza Gutierrez, 1998; Langer, et al., 1997). An exception to this was in Peru, where the intervention included moving contraceptives to the obstetric emergency room (Benson, et al., 1998).

Costs and Sustainability

Nine studies, four of which were sponsored by INOPAL III, are reviewed that included a component to estimate the total average cost to the facility for treating PAC patients. (Benson, et al., 1998; Brambila, et al., 1998a; Friedman, et al., 1998; Fuentes Velásquez, et al., 1998). Cost and resource use data were collected in Bolivia, Mexico, and Peru, but results from the Bolivia cost study unfortunately were not

PAC training must emphasize that method provision should always take place in accordance with the needs and consent of each patient

available at the time of the writing of this chapter. Results from these studies showed that switching to MVA while concurrently reorganizing services tends to reduce patients' average length of stay (ALOS) and treatment costs to the facility substantially (Table 5) (King, et al., 1998c).

Weighted means were calculated in order to give more weight to studies with larger sample sizes. However, the means, weighted means, and medians typically varied by 10% or less for most measures of cost and ALOS (data not shown). Overall, based on data from both INOPAL III and non-INOPAL III cost studies in Latin America, introducing MVA as part of a reorganizing services reduced ALOS and facility costs by approximately 40-50 percent each. However, reporting means obscures important anomalies in the data. While the majority of studies reported marked decreases in ALOS and costs when

TABLE 5
WEIGHTED MEANS OF ALOS AND FACILITY COSTS BASED
ON DATA FROM BRAZIL, ECUADOR, MEXICO, AND PERU:
MVA VERSUS SC*

| Variable | SC [range] (n) | MVA [range] (n) | Difference (% decrease) |
|--------------|-------------------------------|-----------------------------|----------------------------|
| Costs (\$US) | 118.27 [3.06-264.27] (123) | 60.19 [3.66-132.89] (85) | \$58.08 (-49.1%) |

*Based on data from studies reporting ALOS, costs, and sample sizes (Rogers, 1995; Johnson, et al., 1993a; Brambila, et al., 1998a; Johnson, et al., 1993b; Cuarto, 1993; Benson, et al., 1998).

MVA was used to treat incomplete abortion (Benson, et al., 1998; Brambila, et al., 1998a; Abernathy, et al., 1996; Rogers, 1995; Johnson, et al., 1993b; Cuarto, 1993), not all data agreed (Fuentes Velásquez, et al., 1998; Johnson, et al., 1993a). A 1993 study in Ecuador showed that facilities that switched to MVA while continuing to treat postabortion patients with general anesthesia in an operating room actually had similar ALOS and costs than facilities that continued using SC under the same conditions (Johnson, et al., 1993a). Alternately, the Mexico-IMSS reported that, when SC is performed on an outpatient basis, switching to outpatient MVA generates no additional savings over SC (Fuentes Velásquez, et al., 1998).

These data show that reorganization of services rather than changing the clinical technique alone is the key for reducing patient stays and costs to the facility. Improving the quality of PAC services requires much more than new technologies but also comprehensive training, management support, and improved service delivery

The cost study in Oaxaca, Mexico also estimated the cost of the intervention itself, where training and increasing resources for patient counseling cost an average of \$44.43 per patient, or nearly 25% of the total average cost of treating a PAC patient (\$180.22) (Brambila, et al., 1998a). The cost of improving PAC services is an important piece of information for administrators, and future cost studies would benefit from also estimating intervention expenses. However, when comparing cost from the pre- and post-intervention phases of a study, the cost of the intervention should not be included in the estimates of the average total costs of the PAC model. As it is likely impossible to accurately estimate the cost of the original incomplete abortion training providers received in medical school, including training and other related costs of a PAC intervention results in an underestimate of the financial benefit of reorganizing services. Hence, the interventions costs reported by Brambila et al (1998a) were excluded in the cost comparisons in **Table 5** above.

One of the shortcomings of many PAC cost studies has been a narrow focus on costs to the facility. Certainly facility costs are a key component of sustainable services, but patient fees and other out-of-pocket expenses play an important role in whether patients seek professional PAC services when needed. As reorganizing services can substantially reduce costs to the facilities, in some cases administrators have passed these savings on to the patients by reducing fees. For example, in Paraguay, MVA patients were estimated to have 75 percent lower out-of-pocket expenses than their SC counterparts (Abernathy, et al.,

Introducing MVA as part of a reorganizing services reduced ALOS and facility costs by approximately 40-50 percent each

organization. However, anecdotal reports suggest that many providers and administrators believe that adopting MVA facilitates concurrent changes such as making treatment of incomplete abortion an outpatient service. Only two studies reported attempts to make SC an outpatient service or to integrate contraceptive counseling with SC treatment services (Díaz, et al., 1998; Fuentes Velásquez, et al., 1998).

1996). In the Peru study, when the director of the emergency room was presented with data showing that SC patients cost an average of US\$119 to treat compared with \$45 for MVA patients, she cut patient fees in half for ambulatory patients (from approximately US\$32 to \$16) (Benson, et al., 1998). Logbook data from the Peru hospital showed that these improvements have been sustained. In the six months after the study was completed, MVA use for appropriate cases remained over 90 percent and patient fees continued to be lower than before the intervention was implemented.

Lowering costs is an important component to making PAC services sustainable both in individual facilities and throughout health systems. However, sustainability requires more than financial resources. A framework for creating stable PAC programs describes four components for sustainability: 1) policy development; 2) resource allocation; 3) health system infrastructure, and; 4) technical competence (Potts, et al., 1997). Most researchers include only discussions of points 2-4 in their final reports and presentations. However, policy development is the first step in building sustainable PAC programs and thus most PAC OR projects included a policy development component (Benson, et al, 1998; Abernathy, et al, 1996). Two studies in Bolivia serve as examples for the use of PAC OR as a means of furthering policy development in the area of unsafe abortion (Friedman, et al., 1998a; Friedman, et al., 1998b). An opinion survey of providers, administrators, and national-level health authorities was requested by the Bolivian Ministry of Health (MOH) as a tool in their efforts to improve PAC services.

Data established that, despite a conservative environment, demand existed for improved services for the treatment of incomplete abortion, with 89 percent of interviewees supporting a pilot-test of PAC with MVA (Friedman, et al., 1998b). At the request of the MOH, a baseline study was conducted at 12 facilities to document the existing availability, accessibility, cost, and quality of incomplete abortion services in order to evaluate the need for a PAC intervention. Overall, results suggested that existing services were poor and underutilized (Friedman, et al., 1998a). An indirect outcome of these two studies has been an increased willingness on the part of health authorities to discuss the problem of morbidity and mortality related to abortion, bringing PAC to higher levels of visibility than had been previously permissible.

Impact

Results from OR studies can inform policymakers and elicit change well beyond the site or sites where data were collected or interventions introduced. While the full impact of the research described here has yet to be manifested, immediate effects of OR on PAC services at the study sites have been documented by each study discussed in this chapter. In terms of changes in clinical practice, relatively modest interventions have resulted in 75-90 percent of appropriate cases being treated with a safer technique, MVA. Similarly impressive gains in infection prevention and pain management have not been documented. Nevertheless, data indicated that targeted interventions designed from baseline findings have helped improve these components of clinical services. Studies in Mexico and Peru documented

marked improvements in counseling about hygiene, warning signs, and resumption of activities, as well as contraceptive counseling. Data from Bolivia, Guatemala, Mexico, Paraguay, and Peru show that it is indeed possible to integrate contraceptive counseling and emergency treatment of incomplete abortion. These studies also reported that substantially increasing contraceptive acceptance is feasible. Finally, data from several cost and resource use studies showed that, in most settings, reorganizing services and adopting MVA substantially reduced the costs of PAC services both to the facility and to the patient. It is important to note that PAC OR data from Latin America have been corroborated by studies in other regions. In January 1998, a meeting in New York City brought together PAC researchers from Africa, Asia, and Latin America. A commonality of experience was evident PAC services were generally poor at most facilities but could be improved with tailored interventions.

While Latin American research and projects from other regions share many similarities, INOPAL III projects nevertheless have advanced the development of PAC OR methodology. For example, the Peru study was among the most sophisticated studies to date in Latin America to investigate the advantages and disadvantages of integrating contraceptive counseling with outpatient, emergency treatment of incomplete abortion. The study showed that integrating services results in better

contraceptive counseling and method provision, shorter stays, and much lower costs. The study in IMSS hospitals in Mexico City was the most comprehensive review of patient perceptions of pain and pain management protocols, reporting that patients treated with MVA "experienced a more rapid and profound decrease in their perception of pain." The IMSS study was also the first detailed evaluation of incorporating the PAC model into SC services and was the only study in Latin America to follow patients over time. Although nearly 30 studies have used the Ipas methodology to estimate costs associated with the provision of PAC services (King, et al., 1998c), the cost and resource use study in Oaxaca, Mexico introduced an "efficiency ratio" into the analysis, designed to gauge the efficiency of provider interactions with patients. Also, the study in Oaxaca was the only INOPAL III study to estimate costs associated with the intervention itself.

While most INOPAL III studies have only recently completed the data collection and analysis phase, some PAC OR studies have already had impacts at regional and national levels. In Paraguay, a quality of care and cost study was the basis for implementing a national PAC program (Abernathy, et al., 1996). After several years of negotiations, two INOPAL III research projects in Bolivia are guiding the Ministry of Health towards improving PAC services in public health facilities. The possibility of using the PAC model to reduce resource use and facility cost associated with emergency treatment of incomplete abortion has contributed to the Bolivian government's willingness to introduce coverage into its national basic

Integrating services results in better contraceptive counseling and method provision, shorter stays, and much lower costs

health insurance plan for treatment of complications of “hemorrhage during the first half of pregnancy.” Overall, PAC OR studies have helped to transform perceptions about abortion-related issues and fostered an openness in addressing the issues of abortion and maternal morbidity and mortality (Benson, 1998).

Future Directions

While INOPAL III research projects have helped to answer many questions about PAC programs, many issues remain virtually unexplored. Some issues for future research might include the following:

- The long-term sustainability of improvements derived from PAC programs within the health facilities and systems
- Integrating the third component of PAC, linkages of other reproductive health services with emergency treatment services
- Integrating the PAC model into SC services when adopting MVA is not feasible
- Continuation of postabortion contraception over time according to the reproductive intentions of the patient
- Decentralization of PAC services to facilities that have not been previously evaluated by PAC OR studies, including primary and secondary-level health facilities and private facilities
- Specialized populations such as adolescents, patients with sexually transmitted infections, and rural populations
- Men as partners, providers and policy-makers

- Scaling-up of PAC programs from the facility level to the system or national level
- How to address ethical issues in PAC OR

Finally, disseminating results of PAC OR in Latin America to key audiences is critical in order for the results to lead to informed policy and programmatic decisions. Dissemination should always begin with presentations to the staff at the study facility or facilities before going on to wider audiences. In addition, PAC OR results can have benefits well beyond the national or even regional level, and thus researchers should attempt to present findings in journal articles, conferences, and other venues with a regional or international audience. Also, results from studies are increasingly being “published” electronically via “listservs” and the World Wide Web. Websites that may be interested in posting a brief summary of the findings include Ipas's website dedicated to PAC OR projects (<http://www.ipas.org>) and the Population Council's OR/Technical Assistance site (<http://www.popcouncil.org>), and the list is growing daily. Patients, providers, and policymakers throughout the world should benefit from impressive accomplishments of PAC OR in Latin America.

Disseminating results of PAC OR in Latin America to key audiences is critical in order for the results to lead to informed policy and programmatic decisions

Notes

¹ The authors are all employed by Ipas, a subcontractor to the Population Council under the INOPAL III contract. Ipas has designed and implemented several of the studies described in this chapter. Ipas works globally to improve women's lives through a focus on reproductive health.

References

- Abernathy, Marian, S. Aquino, J. Aquino, J.G. Frey, and J.C. Chaparro. 1996. "Results of a pilot project to improve postabortion care in Paraguay: Evaluating costs and quality of care". Presented at the Annual Meeting of the American Public Health Association. New York City; 17-21 November.
- Abernathy, Marian, C. Hord, L.A. Nicholson, J. Benson, and B.R. Johnson. 1993. A guide to assessing resource use for the treatment of incomplete abortion. Carrboro, NC: Ipas.
- AbouZahr, Carla. 1996. Personal communication with DLB.
- Baird, Traci L., R.E. Gringle, and F.C. Greenslade. 1995. MVA in the treatment of incomplete abortion: Clinical and programmatic experience. Carrboro, NC: Ipas.
- Benson, Janie. 1998. "Future directions in postabortion care research". Presented at: Global Meeting on Postabortion Care: Advances and Challenges in Operations Research. New York; 19-21 January.
- Benson, Janie, V. Huapaya, M. Abernathy, and T.D.N. King. 1998. "Improving Quality and Lowering Costs in an Integrated Postabortion Care Model in Peru: Final Report". Peru: Ipas, Population Council.
- Brambila, Carlos, C. Garcia, and A. Heimbürger. 1998a. "Estimating costs of postabortion services at Aurelio Valdivieso General Hospital, Oaxaca, Mexico". Presented at: Global Meeting on Postabortion Care: Advances and Challenges in Operations Research. New York; 19-21 January.
- Brambila, Carlos, M.A. Olaya, F.G. Clavelina, and R. Acosta. 1998b. "Assessment of post-abortion services in four ISSSTE hospitals: Mexico". New York: Population Council.
- Cuarto, Beatriz. 1993. "Reduccion de costos usando AMEU en el tratamiento de aborto incompleto: Un estudio comparativo". Unpublished.
- Díaz, Juan, M. Loayza, Y.T. de Yépez, O. Lora, F. Alvarez, and V. Camacho. 1998. "Evaluation of a strategy for improving the quality of services and contraceptive acceptance in postabortion period in three public sector hospitals in Bolivia". Presented at: Global Meeting on Postabortion Care: Advances and Challenges in Operations Research. New York; 19-21 January.
- Fisher, Andrew A., J.E. Laing, J.E. Stoeckel, and J.W. Townsend. 1991. Handbook for family planning operations research design, 2nd edition. New York: Population Council.
- Friedman, Alison B., C. De la Quintana, G. Jové, V. Huapaya, and T.D.N. King. 1998a. "An Assessment of PAC Services in Bolivia: Final Report". Carrboro: Ipas.
- Friedman, Alison B., C. De la Quintana, and J. Cordova. 1998b. "Feasibility Study for the Introduction of MVA: Final Report". Carrboro: Ipas.
- Fuentes Velásquez, Jaime, D.L. Billings, J.A. Cardona Pérez, and J.B. Otero Flores. 1998. "A comparison of three models of postabortion care in Mexico: Final report". Mexico: IMSS, Ipas, Population Council.
- Gárate, María R., E. Aliaga, V. Huapaya, J. Benson, and M. Abernathy. 1997. "A qualitative assessment of postabortion care in a Peruvian hospital". Presented at the Annual Meeting of the American Public Health Association. Indianapolis, Indiana; 9-13 November.
- Greenslade, Forrest C., H. McKay, M. Wolf, and K. McLaurin. 1994. "Post-abortion care: A women's health initiative to combat unsafe abortion". *Advances in Abortion Care*; 4:1-4.
- Greenslade, Forrest C., J. Winkler, and A.H. Leonard. 1998. "A Framework for Evaluating the Quality of Postabortion Care (PAC) Services". Presented at: Global Meeting on Postabortion Care: Advances and Challenges in Operations Research. New York; 19-21 January.
- Johnson, Brooke R., J. Benson, J. Bradley, et al. 1993a. "Costs of alternative treatments for incomplete abortion: World Bank Working Paper". World Bank: Washington, DC.
- Johnson, Brooke R., J. Benson, J. Bradley, and A. R-bago Ordoñez. 1993b. "Costs and resource utilization for the treatment of incomplete abortion in Kenya and Mexico". *Soc Sci Med*; 36:1443-53.
- Johnson, Brooke, M.T. Mbizvo, T. Chipato, and F. Zawaira. 1998. "Conducting follow-up with postabortion women in Zimbabwe: Some preliminary descriptive findings". Presented at: Global Meeting on Postabortion Care: Advances and Challenges in Operations Research. New York; 19-21 January.
- King, Timothy D.N., M. Abernathy, C. Hord, L.A. Nicholson, J. Benson, B.R. Johnson, and the DataPAC Cost and Resource Use Technical Working Group. 1998a. A guide to assessing resource use in the provision of postabortion care: The DataPAC Core Questionnaire Series (Module 3). Carrboro, NC: Ipas.
- King, Timothy D.N., J. Benson, K. Stein, J. Foreit and Members of the DataPAC Technical Working Groups. 1998b. Guide to using the DataPAC Core Questionnaire Series for postabortion care operations research: The DataPAC Core Questionnaire Series (Module 1). Carrboro, NC: Ipas.
- King, Timothy D.N., J. Benson, and K. Stein. 1998c. "Comparing the cost of post-abortion care in Africa and Latin America: The DataPAC Project". Presented at: Global Meeting on Postabortion Care: Advances and Challenges in Operations Research. New York; 19-21 January.
- Langer, Ana, C. Garcia-Barrios, A. Heimbürger, et al. 1997. "Improving post-abortion care in a public hospital in Oaxaca, Mexico: Final Report submitted by the Population Council Regional Office for Latin America and the Caribbean to the European Union". New York: Population Council.
- Margolis, Alan, A.H. Leonard, and L. Yordy. 1993. "Pain control for treatment of incomplete abortion with MVA". *Advances in Abortion Care*; 3(1):1-8.
- Medina, Ruth M., and I.J. Mendoza Gutierrez. 1998. "Project on Strengthening of the Family Planning Program Post-Partum and Post-Abortion in the Hospital Escuela: Exit Interview of Patients Hospitalized for Abortion in the Infant-Maternal Section, Hospital Escuela, Secretary of Health. Honduras: Population Council.
- Orellana, Mario L., G. Gutierrez, C. Bonatto, and E. Ottolenghi. 1996. "Calidad de servicios dirigidos a las mujeres que cursaron con aborto". Guatemala: Instituto Guatemalteco de Seguridad Social.
- Potts, Jennifer L., L. Bohmer, A.M. Tesfu, et al. 1997. "Ensuring sustainability of post-abortion care programs: The frame-work for sustainability in action". Carrboro, NC: Ipas.
- Rance, Susanna. 1993. "Necesidad de información sobre el aborto". *J&G Revista de Epidemiología Comunitaria*; 4(2).
- Rogers, Pamela. 1995. "A cost benefit analysis of first trimester abortion procedures with manual vacuum aspiration and uterine curettage at Municipal Hospital Dr. Arthur Ribeiro de Saboya Sao Paulo, S.P.". Unpublished.
- Singh, Susheela, and D. Wulf. 1994. "Estimated levels of induced abortion in six Latin American countries". *Int Fam Plann Persp*; 20:4-13.
- Solo, Julie, O. Achola, M. Makumi, D.L. Billings, and C. Aloo-Obunga. 1998. "Creating linkages between incomplete abortion treatment and family planning services in Kenya: What works best?" Presented at: Global Meeting on Postabortion Care: Advances and Challenges in Operations Research. New York; 19-21 January.
- Tietjen, Linda, W. Cronin, and N. McIntosh. 1992. Infection prevention for family planning service programs. Baltimore, MD: JHPIEGO.
- Tinker, A., and M.A. Koblinsky. 1993. "Making motherhood safe. World Bank Discussion Papers #202". Washington, D.C.: World Bank.

- World Health Organization.** 1994. Abortion: a tabulation of available data on the frequency and mortality of unsafe abortion, 2nd edition. WHO/FHE/MSM/93.13. Geneva.
- World Health Organization and UNICEF.** 1996a. Revised 1990 estimates of maternal mortality: A new approach by WHO and UNICEF. Geneva.
- World Health Organization.** 1996b. Studying unsafe abortion: A practical guide. Geneva.

Acknowledgements

Many people have participated in postabortion care research in Latin America. The projects presented in this paper would not have been possible without the tireless efforts of health professionals, administrators, officials, researchers, and funding agencies. A complete list of all the people who have had critical roles in postabortion research would be impossible to compile. However, the authors would like to especially thank those who reviewed this chapter and those who have participated in the INOPAL III research efforts, including:

Marian Abernathy, *Ipas*
 Julio Aguilar Franco, *Hospital Carrión, Peru*
 Carlos Brambila Paz, *Population Council, Mexico*
 Jorge Arturo Cardona Pérez, *IMSS, Mexico*
 Julie Echeverría, *IMSS, Mexico*
 James Foreit, *Population Council/INOPAL III*
 Jaime Fuentes Velásquez, *IMSS, Mexico*
 María Rosa Gárate, *Population Council, Peru*
 Cecilia García-Barrios, *Population Council, Mexico*
 Francisco Gómez Clavelina, *UNAM/ISSSTE, Mexico*
 Forrest Greenslade, *Ipas*
 Sarah Harbison, *USAID*
 Roxanne Henderson, *Ipas*
 Victor Huapaya, *Ipas consultant, Bolivia & Peru*
 Ronnie Johnson, *Ipas*
 Gretzel Jové, *Ipas consultant, Bolivia*
 Ana Langer, *Population Council, Mexico*
 Ruth Maria Medina, *Región Metropolitana, Honduras*
 Irma Mendoza Gutierrez, *Population Council, Honduras*
 Rosa Monge, *Population Council and Ipas consultant, Bolivia & Peru*
 John Nagahata Susanibar, *Ministry of Health, Peru*
 J. Braulio Otero Flores, *IMSS, Mexico*
 José David Ortiz Mariscal, *Ipas*
 Claudia De la Quintana, *Ipas, Bolivia*
 Andrea Saldaña Rivera, *Ipas, Mexico*
 Wilfredo Solis, *Population Council consultant, Peru*
 Ricardo Vernon, *Population Council, Mexico*

EXPERIENCES IN THE DIFFUSION OF EMERGENCY CONTRACEPTION IN LATIN AMERICA

RICARDO VERNON C.

I n t r o d u c t i o n

Emergency contraception (EC) is used following unprotected sexual intercourse to prevent pregnancy. Combined oral contraceptives and the IUD are two methods widely available in Latin America that can be used for emergency contraceptive purposes. Pregnancy may be avoided by ingesting two contraceptive pills with 50 mcg ethynil estradiol/250 mcg levonorgestrel in the first

the cases), irregular uterine bleeding and breast tenderness. Copper-medicated IUDs may also be used as an emergency contraceptive if they are inserted in the first five days following unprotected intercourse. This treatment is 99% effective in preventing unwanted pregnancies. When used for emergency contraceptive purposes, the same counter-indications apply as for the regular use of the IUD (IPPF, 1994).

Although EC methods have been known for nearly twenty-five years, different studies have shown that both service providers and potential users do not have adequate information about them. In Mexico, for example, only 10% of 224 providers in 25 health centers said they would recommend EC to a woman who had had unprotected sexual relations and wanted to avoid a pregnancy (DGSR/SSA, 1997); and in Mexico City, only 5% of pharmacists and 38% of private physicians listed in the yellow pages and professional directories were aware of EC (Givaudan et al, 1998). The lack of promotion of EC methods may stem from the incorrect supposition that because EC is used *after* unprotected sexual relations, they must be abortifacients. Since abortion is considered a crime in nearly all Latin American countries,

Emergency contraception (EC) is used following unprotected sexual intercourse to prevent pregnancy

72 hours after unprotected intercourse, followed by two additional pills 12 hours later. If low-dose pills (30 mcg ethynil estradiol/150 mcg levonorgestrel) are used, four pills must be swallowed for each dose. There are no known counter-indications for these regimes, and they are 98% effective in the prevention of pregnancy. Side-effects include nausea (in approximately 50% of

Copper-medicated IUDs may also be used as an emergency contraceptive if they are inserted in the first five days following unprotected intercourse

Although EC methods have been known for nearly twenty-five years, different studies have shown that both service providers and potential users do not have adequate information about them

and since emergency contraception has not been included in national family planning norms, programs and service providers are reluctant to recommend their use.

INOPAL III conducted three demonstration studies to assess the acceptability of EC pill use for a variety of potential clients and service providers, and to test strategies to disseminate information about the method: 1) in Ecuador, four organizations trained service providers and began offering EC in their clinics and health posts; 2) in Mexico City, the Attorney General's Office provided information on EC to women who reported a rape; and 3) IMIFAP, a non-governmental organization (NGO) specializing in research, conducted mass mailings and distributed materials to service providers, potential users and the media to inform them about EC pills. The following sections present the main results of these studies and activities.

Acceptability of emergency contraception for potential users

Emergency contraception is indicated in cases of unprotected sexual relations, which might have occurred for reasons such as rape, method failure, forgetfulness or unplanned sexual relations. The INOPAL III studies show that women accept emergency contraception in all these situations. In Ecuador, four organizations offered

emergency contraception to their clients, including: 1) the Centro Medico de Orientacion y Planificacion Familiar (CEMOPLAF), which serves 25,000 clients per month in its 21 clinics, 13 mobile services and 160 community-based contraceptive distribution posts; 2) The Centro Obstetrico Familiar (COF), which provides services in 23 family planning and primary health clinics. COF also provides services through a peer to peer program for adolescents; 3) the Centro Ecuatoriano para la Promoción y Acción de la Mujer (CEPAM), which offers health and legal services for women who are victims of abuse. For the EC project, CEPAM coordinated service delivery in 11 MOH health posts, three feminist NGOs, three Women's commissariats, the Medical/Legal Service of the Police Department, and its own centers in Quito and Guayaquil; and 4) the Directorate of Hygiene of the Municipality of Quito, which provides basic health services in urban marginal communities not served by the Ministry of Health. In the EC project, the Directorate trained the staff of 37 community health posts, 20 craft training centers and two municipal high schools to provide EC.

The fact that these organizations serve different clientele allowed them to test the acceptability of EC for different groups of women in different settings. **Table 1** shows that in 13 months, these organizations provided EC pills to 320 women (Vernon, 1998). The most frequently cited reason for requesting EC was unprotected intercourse, followed by method failure and rape. However, in the case of CEPAM, which provides services to victims of abuse, 46% of the EC acceptors

were rape victims. Table 1 also shows that EC was accepted by women of a range of educational levels (depending on the agency providing the service), and by women of different ages. Finally, most women learned about EC from the service providers of the four participating agencies, but also from relatives and friends, as well as from posters and other media messages, such as a front page article on EC published by El Comercio, a newspaper with national circulation.

The Attorney General's Office in Mexico City (AGO) trained psychologists and social workers to provide information on EC to women who reported a rape to one of four public agencies specializing in sexual offenses, as well as to rape victims who attended their Support Therapy

Emergency contraception is indicated in cases of unprotected sexual relations, which might have occurred for reasons such as rape, method failure, forgetfulness or unplanned sexual relations. The INOPAL III studies show that women accept emergency contraception in all these situations

Center. AGO statistics showed that in nine months, 82 of the 823 women aged 13-55 years who reported a vaginal rape were given information on EC. Of these, 22 women attended one of the referral

The most frequently cited reason for requesting EC was unprotected intercourse, followed by method failure and rape

TABLE 1
CHARACTERISTICS OF EMERGENCY CONTRACEPTION USERS
IN ECUADOR BY INSTITUTION PROVIDING THE SERVICE

| CHARACTERISTICS | CEPAM | INSTITUTION COF | CEMOPLAF |
|---------------------------|-------|--------------------|-------------------|
| REASON FOR VISIT | | | |
| Unprotéc sex | 42% | 67% | 76% |
| Method failure | 10% | 27% | 16% |
| Rape | 46% | 4% | 7% |
| Other | 2% | 2% | |
| AGE: | | | Mean age 22 years |
| Less than 19 years of age | 34% | 15% | |
| 18-24 years | 39% | 34% | |
| 25-31 years | 20% | 26% | |
| More than 32 years | 7% | 25% | |
| EDUCATION: | | | |
| Primary | 57% | 57% | 55% |
| High school | 31% | 31% | 29% |
| University | 12% | 12% | 16% |
| Other | NA | 10% | NA |

Source: Vernon, 1998. NA = Data not available

centers and 11 others asked for more information by telephone. Only 20 of the 82 women were followed up. All of them had taken the EC pills and had avoided a pregnancy. The great majority of women who were not given information on EC were either using a contraceptive method when the rape occurred, had reported the rape after more than 72 hours, or were not fertile. Finally, the psychologists could recall only two women who could have benefited from the treatment who stated they would not use the EC pills. In general, the psychologists reported women as being very grateful and relieved as a result of having been informed of the option of EC (Vernon, Shiavon and Llaguno, 1997.)

Further data related to the acceptability of EC for potential users came from surveys conducted by IMIFAP (Givaudan et al, 1998) before and after an informational campaign at the campus of the National Autonomous University of Mexico (UNAM). The students who were interviewed were given an explanation of what emergency contraception was and were then asked a series of questions. In the end-line survey, 65% of the 400 students interviewed said they thought they would use the method, 83% said they would recommend it, and 55% said they thought their partner would accept it.

Acceptability of emergency contraception for service providers

In this section we present data from surveys, simulated client visits, evaluation of training sessions, and the impact of dissemination activities on organizations to assess the acceptability of EC for service providers. These data suggest that service providers often have a positive attitude towards the procedure, but are reluctant to provide it unless they feel they have the full support of their organizations. In Mexico City, for example, 89% of the psychologists of the AGO said before the training that they “completely agreed” or “agreed” with recommending emergency contraception to women who had filed a report for rape and nearly all thought that EC should be provided to rape victims. Nevertheless, during the training sessions several participants voiced strong concerns about the potential consequences of providing information about EC at public agencies, and in follow-up supervision visits three months later it was observed that only one fourth of psychologists were providing information on EC to rape victims. Their main concerns were that the brochure that was handed out to victims did not carry the name of a sponsoring institution, that the head of the Support Therapy Center had not given written orders to provide the information, and that no referral centers for medical care had been established. Once these concerns were taken care of, the proportion of psychologists providing information increased rapidly. The medical referral centers were reestablished with the help of MEXFAM, the affiliate of the

65% of the 400 students interviewed said they thought they would use the method, 83% said they would recommend it, and 55% said they thought their partner would accept it

International Planned Parenthood Federation in Mexico, of SIPAM, a feminist clinic, and CEPARH, a medical research clinic in Mexico City. These organizations trained 35 physicians of 15 clinics and offices in one four-hour session (Vernon, Schiavon and Llaguno, 1997).

IMIFAP mailed brochures to private physicians and pharmacists and directly distributed brochures in health centers and clinics. These activities were evaluated by means of baseline and endline surveys, and by simulated client visits. In all surveys, 200 respondents were randomly selected from the data bases used to mail informational brochures. In the endline survey, 92% of the private physicians who had been mailed a brochure said they would recommend emergency contraception if a patient needed it. In simulated client visits, 14 of 30 physicians in clinics where brochures had been distributed provided information on EC to simulated clients who said they wanted to prevent a pregnancy after unprotected intercourse. Similarly, 13 of 30 pharmacists who had been mailed the brochure provided information on EC to simulated clients (Givaudan et al, 1998).

In Ecuador, 86 providers (49 physicians, 34 nurse/midwives and 3 nurses) received a one-day training session in EC. Their knowledge and attitudes were evaluated by questionnaires administered immediately before and after the training session, and again three months later. In addition, each of the four participating institutions (COF, CEMOPLAF, CEPAR and the Municipality of Quito) conducted two focus groups with their service providers. Before the training, only 36% of the providers said they "totally agreed" with

Service providers often have a positive attitude towards the procedure, but are reluctant to provide it unless they feel they have the full support of their organizations

emergency contraception, compared with 95% after the training. Focus groups showed that although a few physicians had legal and ethical/religious reservations, over 90% accepted EC. A paired comparison of 14 key terms showed that both before and after the training session, unwanted pregnancy was the term that most often came to the mind of service providers when they heard the term "emergency

92% of the private physicians who had been mailed a brochure said they would recommend emergency contraception if a patient needed it. In simulated client visits, 14 of 30 physicians in clinics where brochures had been distributed provided information on EC to simulated clients

contraception." However, after the training, terms suggesting the principal indications for emergency contraception, such as "unprotected intercourse", "casual sexual relations" and "rape", as well as terms associated with the characteristics of the method, such as "dose" and "high effectiveness", became more salient. At the same time, other terms, such as "communication with partner", "reproductive rights" and

Before the training, only 36% of the providers said they "totally agreed" with emergency contraception, compared with 95% after the training

“sexual rights” became less salient. Typical method indications (unprotected intercourse, rape and casual sexual relationships) were the three most salient terms when the providers were interviewed three months later. Consensus analysis also showed that practice in providing the method had increased the agreement in the ranking of the terms by providers, suggesting a more uniformly positive attitude towards the delivery of EC methods (ICRW et al, 1998). Supervisory visits in the following months confirmed that an important proportion of service providers had begun delivering EC methods, giving as reasons their efficacy, requests by women, the low cost and the ease of providing the method (Vernon, 1998).

Another measure of the acceptance of EC by service providers, at least at the policy level, is the number of organizations that have sought to introduce EC in the range of services they provide to their clients upon learning of the method. In Mexico, INOPAL III invited representatives of eight State Attorney General Offices (AGO) and of 10 feminist organizations to an informational workshop. In the first two months after the workshop, six state AGO and four NGOs had provided information on EC to 659 women, and most had conducted training and dissemination activities (Vernon, Schiavon and Llaguno, 1997). One of these state-level AGOs became a strong advocate of EC and obtained funding from UNFPA to publish and distribute

25,000 brochures, give 300 talks and broadcast 416 TV spots and 2,820 radio messages (Vernon, 1998.) In addition, the Attorney General of the State of Hidalgo personally invited all state AGOs to send participants to a national workshop held in Pachuca in August, 1998. Similarly, CEMOPLAF and INOPAL III organized a Latin American Workshop attended by representatives of family planning and feminist organizations from 14 countries. Participants were given a wide range of materials and prepared workplans. They were also offered the assistance of a consultant to help conduct training of trainers (TOT) in their own countries. In the first three months after the workshop, the consultants had given 24 talks and workshops in Bolivia, El Salvador, Honduras, Nicaragua, Paraguay and Venezuela. These talks and workshops were attended by service providers of different institutions, members and staff of medical and nursing societies and university programs, MOH policy makers and regional managers, representatives of feminist organizations, etc. A follow-up of participants conducted two months after the workshop showed that a large proportion had also conducted different activities, such as sharing materials and giving talks to members of their organizations, publishing or broadcasting messages and providing EC services to their clients.

A final indicator of the acceptability of EC is the number of countries that have included emergency contraception in family planning service delivery norms. Brazil, Ecuador, Honduras and Uruguay have modified their family planning norms to include EC as a consequence of recent dissemination and demonstration activities.

In the first three months after the workshop, the consultants had given 24 talks and workshops in Bolivia, El Salvador, Honduras, Nicaragua, Paraguay and Venezuela

Dissemination strategies

The most frequent dissemination strategies used in Latin America have been training of service providers and distribution of printed materials in clinical settings, such as brochures and posters. These conservative strategies have been adopted to avoid potential criticism from groups such as the Catholic Church and others who believe EC is an abortifacient or encourages promiscuity.

IMIFAP tested strategies to inform large groups of service providers and potential users without provoking criticism. The strategies tested and the results observed were the following:

Mailing of brochures to physicians and pharmacists: brochures were sent to 1,518 physicians and 411 pharmacies listed in the yellow pages of Mexico City and in professional directories. Pre and post telephone surveys to a sample of 200 physicians and 200 pharmacists showed that the proportion of pharmacists who were aware of emergency contraception increased from five percent to nearly 26%, while among physicians, the increase was from 38% to 61%. In visits of 30 simulated clients after the mailing it was found that nearly half of the physicians and the pharmacists provided information to a woman who said she wanted to avoid a pregnancy after unprotected intercourse. The cost of informing a physician who did not know of EC before the mailing was estimated at US \$10.78 (as compared to the estimated cost of US \$2.48 for sending the materials to any physician on the mailing list). The cost of informing a pharmacist who did not know of the method before the

The proportion of pharmacists who were aware of emergency contraception increased from five percent to nearly 26%, while among physicians, the increase was from 38% to 61%

mailing was estimated at US \$22 (as compared to the cost of US \$10.78 for sending the materials to all the names in the data base).

Direct distribution of brochures in public health clinics and hospitals: this strategy was tested in six large clinics and two hospitals. Two thousand brochures were distributed to physicians and nurses. The cost of informing a physician who did not know of emergency contraception before the distribution of brochures was estimated at US \$ 1.41.

Public relations campaign with professional courtesy journals: a public relations campaign was conducted to motivate the publication of articles in journals for physicians and pharmacists published by drug companies or editors seeking advertising income. Three articles were published during the course of the project, and commitments for the publication of five additional articles were obtained.

Distribution of brochures and posters at the campus of the Autonomous National University of Mexico (UNAM): a total of 7,000 brochures and 850 posters were distributed at the campus of UNAM. To

The proportion of students who had heard of emergency contraception increased from 37% to 50% between the baseline and the endline surveys, and most had heard of EC through project sources

evaluate this campaign, 400 before and after interviews were conducted. The proportion of students who had heard of emergency contraception increased from 37% to 50% between the baseline and the endline surveys, and most had heard of EC through project sources. Unexpectedly, however, less than one percent of students interviewed said they had ever had unprotected intercourse and worried about a pregnancy afterwards, which would seem to indicate a low potential demand for the method among this population. The cost per student informed (i.e, not counting those who already knew about emergency contraception) was approximately US \$0.11.

Public relations campaign in the media: to motivate the publication and/or broadcasting of news items on emergency contraception, 115 folders with information on EC were sent to a pre-selected list of editors, and radio and TV producers, to whom follow-up telephone calls were made at regular intervals. A total of six radio programs, one TV interview in *Hola Mexico*, a national morning news program, and one scene in a soap opera (*Mirada de Mujer*, the soap opera with the highest rating when broadcast) resulted from this public relations campaign. The estimated audience of these programs is 11,800,000 persons. The cost per informed person through radio and TV was estimated at US \$0.0000745,

a cost equivalent to less than two percent the cost that would have been incurred if time had been purchased at commercial rates. In the case of print media, 11 articles were published in newspapers and magazines with a readership of an estimated 953,000 people. Three articles appeared in newspapers and the remainder in magazines with the largest circulation in Mexico, such as *Contenido*, *Eres*, *Muy Interesante*, and *Padres e Hijos*. Given the very specialized nature of magazine marketing, these articles allowed IMIFAP to reach very defined target populations such as young mothers, adolescents, middle-aged parents, young males, etc. The estimated cost per person informed was US\$0.002, which is 6.4% of the cost of purchasing the equivalent space at commercial advertising rates. In addition, 10 magazines made commitments to publish news items and articles on emergency contraception at dates beyond the end of the project. If all of these articles are published, the total number of additional people informed will be 423,000, at a cost of US \$0.006 per person.

Perhaps the most striking aspect of the dissemination activities conducted by IMIFAP was that they did not provoke complaints. Even in call-in radio and TV programs, less than five percent of the calls were opposed to emergency contraception.

Conclusions and recommendations

Despite the fear of the participating organizations, only weak opposition to the dissemination of information and delivery of emergency contraception has been encountered. Service providers have found

Perhaps the most striking aspect of the dissemination activities conducted by IMIFAP was that they did not provoke complaints. Even in call-in radio and TV programs, less than five percent of the calls were opposed to emergency contraception

that introducing these methods in their organizations is relatively simple, and that the method is easy to use, widely available, inexpensive and effective. In all the reported experiences, the training of providers has not taken more than one day, and often takes only a few hours. For these reasons, we recommend that all family planning service providers train their service delivery staff on EC.

The different projects have shown a rather limited potential market for emergency contraception. In Ecuador, only 320 users were serviced through a large number of service delivery sites in one year, and at the National University in Mexico only about 1% of the students said they had ever worried about a possible pregnancy after unprotected intercourse. Based on these findings, efforts should be made to carefully identify opportunities where the method may be most useful. Introducing EC as an element in the care of rape victims has proven very acceptable in all countries. This has allowed organizations to gain experience in training staff and delivering the services while providing a very valuable service to abused women. This initiatives have also helped service providers to establish links with a large variety of feminist and legal organizations, which in itself can be considered a positive outcome.

To expand use of EC, reproductive health organizations will have to increase the dissemination of information both to service providers and the public. In different projects an increase in the number of requests for services has been observed after dissemination activities. In Ecuador, for example, the number of requests at

Service providers have found that introducing these methods in their organizations is relatively simple, and that the method is easy to use, widely available, inexpensive and effective

service delivery sites increased after the newspaper El Comercio published a one-page article on the method and the organizations providing it; similarly, the medical services of the National University of Mexico began to have requests after a dissemination campaign at its campus. Different projects have shown that some dissemination activities can be conducted very cheaply, such as the distribution of brochures at clinics, conferences and professional meetings, and by sending these materials to the media, who are interested in publishing news items on the method. These dissemination activities among service providers have also proven effective, given that a large proportion of physicians and pharmacists provided the service after receiving the brochures. Reproductive health organizations should identify special opportunities for informing service providers and potential users about EC.

The different projects have shown a rather limited potential market for emergency contraception

In different projects an increase in the number of requests for services has been observed after dissemination activities

References

- Consensus statement on emergency contraception.** Contraception 52, October 1995. pp 211-213.
- Dirección General de Salud Reproductiva, Secretaría de Salud (DGSR/SSA), 1997.** Frequencies of survey of health service providers of project "Linking reproductive health services". Unpublished data. INOPAL III/Population Council and DGSR/SSA, Mexico City, Mexico. ICRW, 1998. Four Approaches to Emergency Contraception in Ecuador. INOPAL III Final Report. ICRW, CEMOPLAF, COF, CEPAM and Dirección General de Higiene of Quito. Quito, Ecuador.
- International Planned Parenthood Federation (IPPF).** 1994. Medical Bulletin. IMAP Statement on Emergency Contraception. Volume 28, No 6, December.
- Givaudan, Martha; Ricardo Vernon, Carmen Fuertes and Susan Pick,** 1998. Estrategias de Información sobre Anticonceptivos de Emergencia. Documentos de Trabajo, núm. 5. Serie INOPAL III del Population Council, México, D.F.
- Paolisso, Michael, Pinto, Ernesto, Carrillo, María de Lourdes, López, Martha, Arellano, Mónica, Maceira, Marjoire,** 1998. Providing Emergency Contraception in Ecuador. Assessing the Impacts of Training and Practice. International Center for Research on Women (ICRW) Washington, D.C.
- Vernon, Ricardo (ED.)** 1998. Ampliando el acceso a la anticoncepción de emergencia en América Latina, Memorias, Taller regional en Quito, Ecuador, México: INOPAL III, Population Council.
- Vernon, Ricardo, Raffaella Schiavon and Silvia Elena Llaguno.** Emergency Contraception as an Element in the Care of Rape Victims. 1997. INOPAL del Population Council., Mexico, D.F.

STRATEGIES TO ACHIEVE THE FINANCIAL SUSTAINABILITY OF PRIVATE INSTITUTIONS PROVIDING REPRODUCTIVE HEALTH SERVICES

CARLOS BRAMBILA

Introduction

Pivate organizations offer between ten and eighty percent of reproductive health services in Latin American countries. These institutions have traditionally been dependent on external financing for their sustainability. At the present time, an imminent priority of these organizations is to reach a level of financial sustainability which will permit them to survive with minimum external support.

The inexorable reduction of international funds to support private family planning institutions leads them to ask: How is it possible to improve levels of self-sufficiency? What strategies of income generation are successful? How should prices of services and products be set? How can costs be reduced?

The level of financial self-sufficiency indicates the degree of an organization's autonomy or independence of external financial support or grants. To reach an acceptable level of sustainability implies the establishment of a managerial style and the development of an business mentality within an organization. When an acceptable level of sustainability is reached, organizations have little dependence on donor organizations, greater flexibility in the use of their funds (with

the reduction of restricted funds), and greater financial control of the institution.

By the end of 1997 the principal private reproductive health service delivery organizations in Latin America were partially self-sufficient. APROFE, in Ecuador, had achieved 58 percent self-sufficiency, CEMOPLAF, Ecuador, 78 percent, MEXFAM in Mexico, 56 percent and FEMAP, Mexico, 78 percent. Other organizations such as ASHONPLAFA in Honduras, PROFAMILIA/Nicaragua, and PROFAMILIA/Guatemala had reached less than 30 percent. A point of comparison is PROFAMILIA/Colombia, which reports a level of 90 percent self-sufficiency.

The inexorable reduction of international funds to support private family planning institutions leads them to ask: How is it possible to improve levels of self-sufficiency? What strategies of income generation are successful? How should prices of services and products be set? How can costs be reduced?

The objective of this report is to respond to these questions, utilizing the results of operations research projects carried out by the INOPAL III program of the Population Council between 1994 and 1997. In this report the main results are presented of these operations research

projects carried out in three specific areas: 1) fee (or price) setting, 2) cost studies and 3) income generation strategies. The principal lessons learned in these areas are discussed and a research agenda for the future is proposed.

Background

There exist at least four general reviews of the accumulated experience of operations research in the area of financial sustainability of organizations: Gallen and Reinhart (Population Reports, 1986), Bertrand, (1990), ENTERPRISE Project Report (1993), Janowitz (UNFPA, 1995). These reviews identify established knowledge and thematic areas which still need further study. Gallen and Reinhart (1986) conducted a comprehensive review of operations research projects completed through 1985. The principle findings on program sustainability as of that date are the following:

1. **Costs recovery and Fees:** Small increments in fees do not necessarily reduce the use of contraceptive methods. Numerous surveys show positive attitudes among community members regarding charging fees for services.
2. **Cost effectiveness and self-sufficiency of community based programs.** The cost effectiveness of community based programs increases over time. Community based distribution systems are expensive due to transportation and personnel costs.

The conclusions of Bertrand (1991) can be summarized as follows:

1. **Programs in the marketplace.** The principal problems with the distribution of contraceptives in markets are: Under what conditions is it advisable that market vendors sell such a product?

That consumers buy such a product? And finally, what are the characteristics of the best vendors? Research carried out since 1985 confirms that there is a certain reticence on the part of women to buy contraceptives in the marketplace and that sales are lower than was expected. In part, this is due to a lack of trust in the vendors, who are not trained health workers. However, some positive experiences with the commercial sale of contraceptives proves that some salespeople can adequately distribute contraceptive methods.

- 2) **Programs in the workplace.** Four operations research projects demonstrate that, although services provided in the workplace are effective and increase contraceptive use, they are extremely expensive. The cost of this distribution system is related to the size of the business: the larger the target population, the greater the cost, and the lower the cost-effectiveness. One feasible alternative to reducing the high cost is to create a hospital-business relationship, which reduces medical costs to businesses and their employees while increasing the clientele of the hospitals and clinics.

In a meeting taking place in March, 1994, the following conclusions were reached (Janowitz, 1995):

1. "Few studies have been carried out on the impact of fees on the demand for family planning services; although these indicate that significant increases in prices can negatively affect the use of family planning services. However, to date, "classical" operations research studies, using experimental and control groups have not been used (or they

have been well hidden). This type of research is needed to clarify the role of price changes in demand. It is necessary to apply this kind of research to explore the substitution of cheap distribution points with more expensive ones.”

2. Finally, while programs can sell other services to increase their revenues and to subsidize family planning services, these services are not without costs. It is necessary to examine in more detail whether the resources utilized to generate income would not be better used in providing services directly.

In this report, more recent research is presented which responds to some of the above-outlined issues.

Fee Setting

There are two fundamental problems in the setting of fees: 1. How to set fees for reproductive health services? and 2. what is the impact of fee increases on the demand for services? In this section, results of research in this area is presented.

1. How to set fees?

There are four common practices in fee setting: a) based on the ability to pay of current or potential clients, b) based on the willingness to pay of actual clients, c) based on the institutional costs, and d) based on fees set by competitors. It is also possible to determine fees based on a combination of these strategies.

a. Ability to pay of current or potential clients

One strategy for fee setting is to know what the ability to pay of real or potential clients actually is. It is possible to measure the

There are four common practices in fee setting: based on the ability to pay of current or potential clients, based on the willingness to pay of actual clients, based on the institutional costs, and d) based on fees set by competitors

ability to pay through the use of surveys which allow for the assessment of the socio-economic level of respondents, and the proportion of income that they spend on health services.

One strategy for fee setting is to know what the ability to pay of real or potential clients actually is

The principal disadvantage of the use of this approach is that the methodology provides averages of clients' ability to pay. This implies that the fee set for a particular service is necessarily greater than the ability to pay of many clients, who as a result are not able to avail themselves of the services offered.

The principal disadvantage of the use of this approach is that the methodology provides averages of clients' ability to pay. This implies that the fee set for a particular service is necessarily greater than the ability to pay of many client, who as a result are not able to avail themselves of the services offered

In order to overcome this problem, APROFE conducted a study on the ability to pay of its clients. The study sought to evaluate the economic profile of the users of APROFE's clinics and to assess whether the clients would be able to pay higher fees.

The study consisted of the application of a questionnaire to 400 clinic users in each APROFE clinic over a four week period. The ability to pay of clients was determined based on: 1) their ability to purchase durable goods, 2) consumption habits, and 3) family income.

One methodological innovation in the APROFE study was distinguishing two approaches to determining ability to pay: 1) a system based on individual ability to pay of the clients, and 2) a system based on groups, in which an average ability to pay of the clinic's clientele was calculated. This distinction was made using cluster analysis, in which groups of individuals were formed, based on similar economic possibilities.

The results of the APROFE study show a median annual family income of US\$1,896. Ninety one percent of the interviewees have a television, 62% have a refrigerator, and 13 percent own a car. These calculations allowed for an estimation of the relationship between the price of the services being offered and the resources available to the consumers to acquire them. The calculations were made for three services: a) IUD insertion, b) follow-up visits for IUD users, and c) gynecological treatment. The relationship fee/purchasing power was obtained by dividing the price of the services by the client's income. This analysis was conducted for three groups, representing the 20th, 50th and 80th percentiles of the income distribution of the sample.

The results of this analysis are shown in **Table 1**, where it can be seen that the price of an IUD insertion represents, on average, between 3.28 and 7.64 of the monthly income of the different income groups. For the group with lower income

levels, an IUD insertion represents 7.6%, for half of the population it represents 5%, and for the highest income group, it represents 3.18 percent.

The clients of one of the clinics (Duale) were found to be the poorest of the APROFE clinics; while the fee of UD\$6.84 being charged in the same clinic was one of the highest. Conversely, clients of another clinic (Solanda) had one of the highest income levels in the program, yet they were being charged the second lowest price (USD\$4.11) for an IUD insertion, paying on average only 2% of their monthly income.

This study permitted the establishment of a fee-setting policy more in accord with the socio-economic characteristics of the organization's clients. It has allowed for the maintenance of affordable prices for the lower income groups and acceptable prices for the higher income groups. On average, APROFE's services continue to be sustainable, without affecting the population intended to benefit from its services.

b. Surveys on willingness to pay

CEMOPLAF, with the assistance of INOPAL and FHI, tested the predictive validity of Willingness to Pay (WTP) surveys, also known as Contingency Value, in estimating the impact of price increases on the demand for services (price elasticity). The methodology of the WTP surveys has not been adequately applied in the field of reproductive health, but it has been used successfully in the measurement of non-renewable resources, such as the environment. The WTP surveys consist of determining how much a consumer would be willing to pay for a good or a service. The questions on willingness to pay take the form of a betting game. An initial offer is made

regarding a possible fee for a service (for example, S./4,500 or US\$1.00) to clients. After the respondent accepts or rejects this price, a second, higher, (for example, S./9,000 or US\$2.00) or lower (S./2,500 or US\$.50), offer is made, depending on the answer. To measure the predictive validity of this methodology, the CEMOPLAF study compared the elasticity of the prices of the three services initially estimated using the WTP questions with real changes observed during an experiment in which the prices of the services offered by the institution were increased. First, the WTP survey was conducted in order to establish real fee increases in a controlled fashion. Then, the prices were raised in selected clinics. Finally, the changes in demand were observed to see if they corresponded to what the initial WTP survey had suggested. During the eleven month experimental period, between November 1996 and October 1997, two additional WTP surveys were conducted to measure the effect of the price increases on client characteristics. The information on volume of services provided and revenues was collected using institutional statistics. (Table 2)

The WTP surveys provide administrators with a powerful decision-making tool. They produce information on the range of fees within which the demand for services is inelastic and mutual balance between revenues and service volume. If future studies confirm the conclusions of the Ecuador study, WTP surveys can provide managers with a useful instrument for solid decision-making regarding pricing. As a decision-making tool, the WTP methodology is efficient and can be made routine if it is accompanied with training programs and a comprehensive instruction manual.

TABLE 1
COST PER IUD INSERTION AS PERCENTAGE OF MONTHLY HOUSEHOLD
INCOME IN SELECTED PERCENTILES OF INCOME DISTRIBUTION
BY CLINIC APROFE, 1997

| Percent | Percentile of income distribution | | |
|---------|-----------------------------------|-------|------|
| | 20 | 50 | 80 |
| Maximum | 16.66 | 11.10 | 6.84 |

Number of clinics: 19

c. Determination of fees based on institutional costs.

In FEMAP the institutional practice was to set prices to ensure that they were lower than the prices of competing institutions and as a function of inflation and increases in the minimum wage. As a result of this policy, each time fees were raised, the volume of services decreased, and as a result revenues fell. In this fashion, in less than six months, the "positive effect" of any price increase was reverted.

TABLE 2
COMPARISON OF ESTIMATIONS OF PRICE ELASTICITY.
OBSERVED VS. EXPECTED. CEMOPLAF, 1997

| | Observed | Expected | Difference |
|----------|----------|----------|------------|
| Ob-Gyn | 0.32 | 0.24 | 0.08 |
| Prenatal | 0.19 | 0.64 | -.45 |

The WTP surveys provide administrators with a powerful decision-making tool. They produce information on the range of fees within which the demand for services

To solve this problem FEMAP conducted cost studies in seven of its affiliates to determine the real operational costs of the affiliates, the real costs of service delivery, the structure of institutional costs and the levels of financial self-sufficiency of the organization, its departments and their respective services. This study provided information for the development of strategies to control, reduce and recover costs. It also facilitated the presentation of costs to the affiliates, as well as the adoption and institutionalization of productivity standards which had been developed in the

Using these measures FEMAP established a pricing policy for services based on their costs, without taking into account market prices. This permitted the reduction in real terms of some fees, and resulted in an increase in the volume of services provided. For example, an X-ray was costing the institution \$55.00 pesos (\$US6.62) and the price charged to the public was only \$45.00 Mexican pesos (US\$5.42). The decision to maintain prices was due to the fact that it was very evident that low productivity levels were affecting the cost of the service, and that in the moment that volume was increased, the cost would be reduced, and thus would be profitable. Currently, these services are the institution's most profitable, providing monthly returns of more than US\$8,000.00.

d. Fee setting based on the competition
The case of MEXFAM, in which marketing studies were conducted with the support of SOMARC and IPPF, in order to establish ten clinics is illustrative of the setting of fees based on prices charged by competitors. As a part of these marketing studies, the information presented in **Table 3** was collected. In this table, the prices by type of service are shown for non-MEXFAM clinics located in the area of influence in which the Guadalajara clinic was established.

2. Elasticity of reproductive health service prices.

Program administrators need a reliable and simple methodology to determine price elasticity. Demand elasticity is defined as the quantity of services which are no longer provided when there is a price increase, or vice-versa, the quantity of additional services provided when prices are lowered.

FEMAP conducted cost studies in seven of its affiliates to determine the real operational costs of the affiliates, the real costs of service delivery, the structure of institutional costs and the levels of financial self-sufficiency of the organization, its departments and their respective services

previous seven years. The studies enabled the comparison of costs between affiliates, their departments, services, procedures and products. The principal results of these actions are shown in **Graph 1** where it can be seen that since 1993 the prices for general check-ups in FEMAP have been reduced as much as 75% in constant 1993 prices. The significant reduction in costs permitted FEMAP to reduce its prices in real terms, which gives the organization a comparative advantage with its competitors.

FEMAP established a pricing policy for services based on their costs, without taking into account market prices

GRAPH 1
 COST AND PRICES FOR GENERAL CONSULTATION (MEXICAN PESOS AT CONSTANT 1993 PRICES)

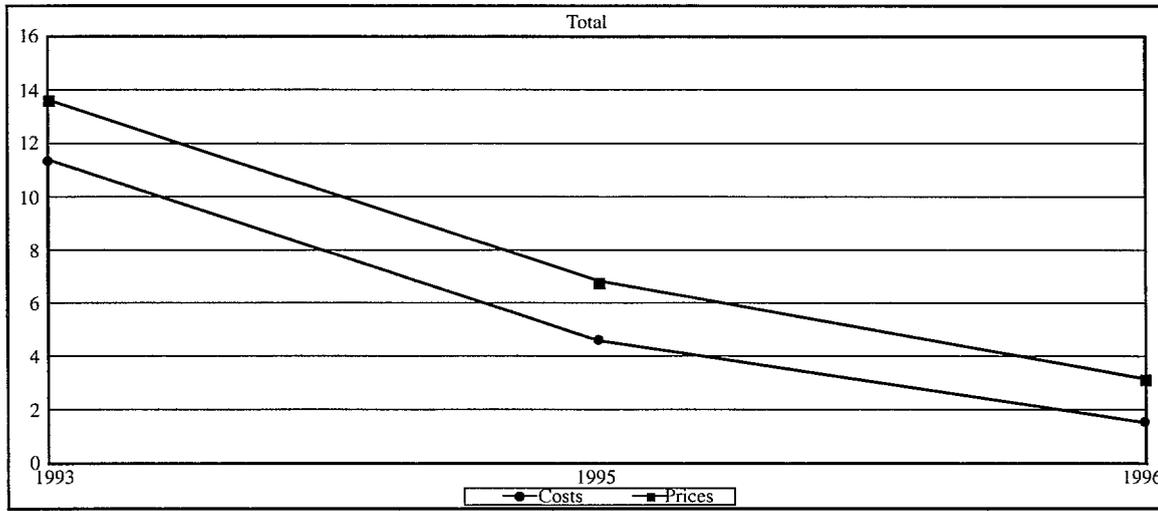


TABLE 3
 COSTS OF THE GUADALAJARA CLINIC'S COMPETITION.
 MEXFAM, 1996

| Service | MEXFAM | Competition | | | |
|-----------------|--------|-------------|----------|----------|----------|
| | | Clinic 1 | Clinic 2 | Clinic 3 | Clinic 4 |
| Ultrasound | 80 | 200 | 200 | NA | 150 |
| Pediatrics | 60 | 100 | 50 | 80 | 100 |
| Cesarean | 2400 | 1200 | 2500 | 3500 | 2900 |
| Family Planning | 25 | 30 | 0 | 20 | 100 |

Demand elasticity is defined as the quantity of services which are no longer provided when there is a price increase

This methodology allows managers to balance problems of institutional sustainability with problems of access to services. Unfortunately, to date, few or no methodologies have been developed to measure elasticity for family planning and reproductive health services.

The study carried out by CEMOPLAF to test the predictive validity of the WTP surveys described in section b, also provided information for reliable calculations of the elasticity of prices of reproductive health services. As a reminder, this study consisted of an experiment in which price increases of 40 and 60 percent were programmed in groups of clinics, grouped in randomized blocks. In the clinics which made up the control group, only a 20 percent increase was programmed to compensate for inflation.

The observed elasticity in the three services analyzed was -0.32 for gynecological consultations, -0.42 for IUD follow-up visits, and -0.19 for prenatal services. These results, related to the prices and the price increases which were in place during the experimental period, show that the demand for CEMOPLAF's services is inelastic.

The demand for ob-gyn services among CEMOPLAF clients is inelastic in the range of US\$0.50 to US\$5.00. Within this range, price increases can result in increased revenue because the price increase more than compensates for the loss in clients. In contrast, outside this range, the demand is elastic and any increase in prices will produce a loss of clients which will not be compensated for by the income generated.

The implication of this inelasticity is that clinic revenues can be increased by raising the price of services. The results of this study are important in that they suggest that in Latin America it is possible to increase institutional revenues by raising fees, since the demand for reproductive health services is inelastic. It is necessary to explore this possibility in greater depth.

TABLE 4
BALANCE BETWEEN FINANCIAL SUSTAINABILITY AND SERVICE UTILIZATION
OB-GYN SERVICES, CEMOPLAF, ECUADOR. 1997

| Current price | New price | | % change in | % change in | % change in |
|-------------------|-----------|------|-------------|-------------|-------------|
| | Sucres | US\$ | price | utilization | revenues |
| \$2.77(S./10,000) | 14000 | 3.89 | 40 | -7.6 | 29.4 |

The implication of this inelasticity is that clinic revenues can be increased by raising the price of services

Table 4 shows the average prices, and the average number of visits, with their respective standard deviations, for each service, by clinic group for the quarters immediately preceding or following the price increases which were implemented in November, 1996. The information on service utilization was obtained from CEMOPLAF service statistics.

Discussion

Currently it is almost obligatory for institutions providing health services in Latin America to charge for the goods and services offered. The experience of the leading institutions in the field indicate that it is possible to have a commercial orientation towards the sale of services, without losing the social "Mission" of their programs. It has been recommended that

the use of the term “commercial orientation” be changed to “managerial focus”, which is compatible with the Mission of reproductive health associations. This proposal requires a better understanding of payment exemption systems, procedures to assess the ability to pay of clients, and a reliable basis on which to assess the impact of price increases. The research presented in this section shows innovative experiences in this area and a reliable methodology to determine the consequences of raising fees on the demand for services. It is necessary to distinguish between institutional self-sufficiency and the self-sufficiency of services. The self-sufficiency of services can be defined as the balance between the income generated by the service and its costs. In turn, costs can be defined as: a) total costs (including indirect costs, operational expenditures and the depreciation of capital goods) or b) just operational costs. Some institutions want their services to be totally self-sufficient, as a function of total costs. Other organizations simply try to ensure that the income generated by service is sufficient to cover its operational costs, with the expectation that other costs, such as indirect costs and depreciation, will be covered by donors or other alternative sources of funding.

It is important to note that the search for institutional self-sufficiency does not imply that all services offered by the institution generate income. Some services can be provided at a loss, such as family planning services. Each institution must decide what its profit margins are for each service, and establish institutional policies which ensure the continuity of service provision, without sacrificing the institutional Mission.

The research presented in this section shows innovative experiences in this area and a reliable methodology to determine the consequences of raising fees on the demand for services

Cost studies

1. Use of cost analyses

The goal of cost analyses is to be aware of the economic reality of providing services. These studies can be conducted at the aggregate level for the entire institution, or they can be done for specific services. Depending on the reach of the study, they can be useful for monitoring and evaluating the financial performance of individual service delivery units, or of the entire institution. Cost studies are a fundamental tool in establishing cost reduction strategies, price-setting policies, for identifying sources of excessive expenditures and for evaluation of the performance of service departments. Management needs to be aware of costs in order to determine if the levels of productivity being achieved by service providers are reasonable, from an economic point of view. For this analysis, it is necessary accept the premise that the productivity and performance of clinics and service providers is not productivity alone, but productivity at a fixed cost.

Cost studies are a fundamental tool in establishing cost reduction strategies, price-setting policies, for identifying sources of excessive expenditures and for evaluation of the performance of service departments

Cost studies provide answers to basic questions such as: What is the profit margin of each service?; What is the break-even point by service, expressed in numbers of services and revenues? Cost studies can be used to determine historically the trend of the organization's primary services with respect to the break-even point. This financial perspective is important because it provides a realistic assessment of how much other services with a social orientation towards low-income groups can be subsidized.

2. Productivity necessary to reach the break-even point

Cost studies have allowed MEXFAM to calculate its actual profits by service and by clinic. These studies have provided a better understanding of clinic operation as well as of which services generate profits and which need a longer time frame to be profitable, or are simply unprofitable. MEXFAM has used these studies to program activities and to set minimum levels of return for clinics and services.

The calculation of fixed and variable costs allowed MEXFAM to determine the number of services which must be sold to reach the break-even point. The break-even point is that level of sales which permits cost recovery for a service in a specific time period. All income generated by a clinic after reaching the break-even point is gross profit which is used to cover fixed indirect costs.

The break-even point of a specific service is presented in **Graph 2**, which shows that at a specific price, as volume goes up, total costs as well as revenues increase. The difference between total costs and total revenues is the profit margin. A point exists, which is the break-even point, in which the costs are equal to the revenues, and profits are zero. It is possible to calculate the break-even point of each service, or of each clinic.

The break-even point can be expressed as the volume of sales necessary so that the institution neither gains nor loses, or as the volume of services it is necessary to sell at a specified price to cover the costs incurred.

The term operations research is used to refer to the use of scientific methods and procedures to solve administrative problems, in this case, of reproductive health programs. As opposed to socio-demographic research on programs, operations research emphasizes the components and processes of service-delivery which are under the control of a program's administrators or directors. (**Table 5**)

3. Cost components of community distribution systems.

FEMAP calculated the costs of all its services including its community distribution systems. The methodology utilized by FEMAP included the observation and calculation of the resources necessary to provide services, including the necessary supplies, personnel time spent on each activity, and material resources utilized. In order to conduct this analysis, it was first necessary to measure the organization's installed capacity, defined as the resources available for service delivery. The cost

MEXFAM has used these studies to program activities and to set minimum levels of return for clinics and services

GRAPH 2
GRAPH SHOWING THE BREAK-EVEN POINT
HYPOTHETICAL DATA

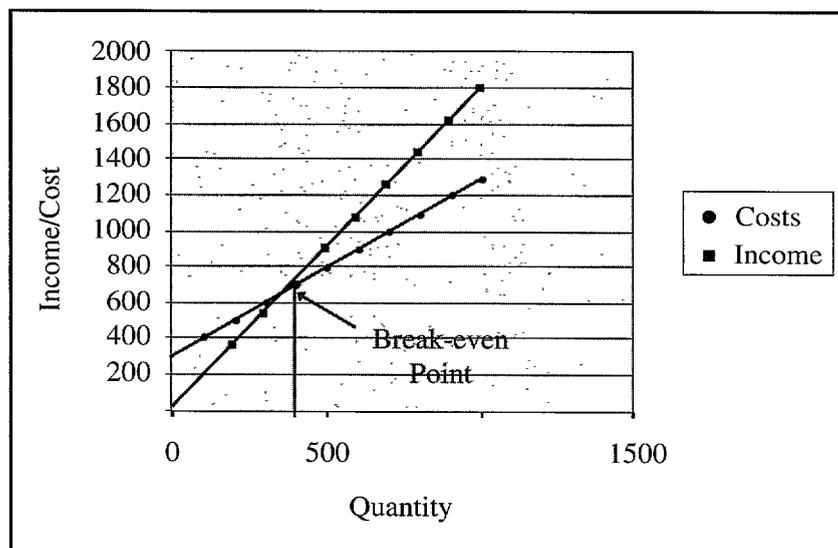


TABLE 5
NUMBER OF SERVICES NECESSARY TO REACH THE BREAK-EVEN POINT
BY SERVICE NEZA CLINIC, MEXFAM JULY-SEPTEMBER, 1995

| Item | Mexican Pesos |
|----------------------------|--------------------|
| Revenues | 350,169.00 |
| | Number of services |
| Family planning | 106 |
| Gynecological consultation | 6 |
| Colposcopy | 33 |

analysis included the valuation of various areas which did not directly participate in the community distribution system, but without their contribution, the service would not be possible; such as administration, maintenance, and support services. The cost analysis of family planning services required an assessment of: 1) the distribution of material resources by type of service, 2) the distribution and use of personnel time for all staff, 3) use of indirect services and

resources such as administration, the proportional use of logistics and maintenance services. The calculation of the distribution of resources represents a measurement of the installed capacity of the affiliates participating in the study.

The results of the six affiliates studied show the average cost per family planning consultation to be US\$2.65: the cost per user in the community based distribution (CBD) system in rural areas to be \$US4.54

and in urban areas \$US5.10. Commercial distribution of services, such as family planning promotional activities in factories or businesses, has an average cost of US\$7.57.

Various factors affect the costs of the CBD programs. The principal ones identified are: 1) the scale of the program or the volume of users per program, 2) the composition of costs or the principle sources of these costs, and 3) the use of installed capacity, or productivity.

The results of this research show that, at a greater scale or size of a CBD program, costs per user decrease. The costs per user are lower in large programs because the marginal cost of reaching new users are minimal, once the initial costs of the program are covered. The programs develop economies of scale which permit the reduction of costs and increase cost-effectiveness, once the threshold is crossed in program development.

The structure of costs, or the proportion of total costs spent on salaries, materials, travel and transportation, supplies, etc., determine the cost per user. The distribution of costs is different for new programs, in comparison with programs which are in the expansion or mature stages. The greatest costs for emerging programs are administrative and organizational. In

contrast, the principle costs for expanding programs are supplies, and the direct costs of service provision. This pattern can be seen in **Table 6**.

Discussion

The goal of cost analyses is to understand the economic realities of service provision. Among the principal difficulties of carrying out cost analyses are: a lack of a "culture of information", imperfect information systems, and until recently, a lack of institutional interest in costs.

Depending on the reach of the studies, they can be useful for the monitoring and evaluation of the financial performance of service delivery units, or of the overall organization. Cost studies are a tool for price-setting, for determining sources of excessive costs, and for the performance evaluation of service delivery. The case of MEXFAM illustrates a convincing use of cost analyses, in that the information is used and translated into concrete actions, by administrators and by service providers. MEXFAM uses its financial information to evaluate whether the performance and self-sufficiency goals have been reached. This is done at all levels of the institution, from the top management to the service delivery levels.

The experience of FEMAP shows the use of cost analyses which illuminate aspects of the service delivery process. Using these studies, FEMAP has identified the factors which affect the costs of its CBD programs, and which are under the control of managers: a) the productivity of service providers, and b) the composition of costs, including administrative costs.

The structure of costs, or the proportion of total costs spent on salaries, materials, travel and transportation, supplies, etc., determine the cost per user. The distribution of costs is different for new programs, in comparison with programs which are in the expansion or mature stages

TABLE 6

COST COMPOSITION AND COST PER USER COMMUNITY BASED
DISTRIBUTION PROGRAMS FEMAP, MEXICO. 1996

| Costs | TAPACHULA | VERACRUZ | IRAPUATO | MATAMOROS | CD.JUAREZ |
|-----------------|------------------|-----------------|-----------------|------------------|------------------|
| Incentives | 10.18 | 8.00 | 20.17 | 21.25 | 9.37 |
| Equipement | 0.50 | 0.09 | 0.40 | 0.39 | 0.30 |
| Other costs | 20.81 | 13.81 | 15.75 | 14.53 | 14.40 |
| Total | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Cost: Rural CBD | 5.33 | 13.33 | 7.39 | 3.5 | 3.3 |

The goal of cost analyses is to understand the economic realities of service provision. Among the principal difficulties of carrying out cost analyses are: a lack of a “culture of information”, imperfect information systems, and until recently, a lack of institutional interest in costs

Income generations strategies

1. Why test different income generation strategies?

There are numerous factors which necessitate that institutions seek new income generation strategies. Among those factors which are external to the institution is the trend of declining donor financing. Among the internal factors are: the necessity of expanding programs to respond to the new needs of the communities being served, new market opportunities to be taken advantage of, and the need to optimize the use of available

human and material resources to attend growing numbers of clients. Reproductive health service delivery organizations have a captive market in terms of their clients whose health needs must be understood, as well as their medical services consumption behaviors. Studies of these factors can identify marketing opportunities which have traditionally not been targeted.

2. Medical services clinics

Faced with a decrease in external donor funding, MEXFAM opted for an investment in a national network of clinics. When IPPF's Transition Project began, these clinics were

supported nearly 100% by donor funding. With the passage of time, this support has been gradually declining. The strengthening of the institutional capacity to monitor the financial performance of these clinics has greatly contributed to their development. MEXFAM first sought to integrate financial information with service delivery statistics in order to calculate revenues and profit margins by service, and by clinic, on a month basis. Subsequently, a continuous evaluation system was established in which the administrators of each clinic could assess whether the monthly objectives had been met; and if not, to take corrective action.

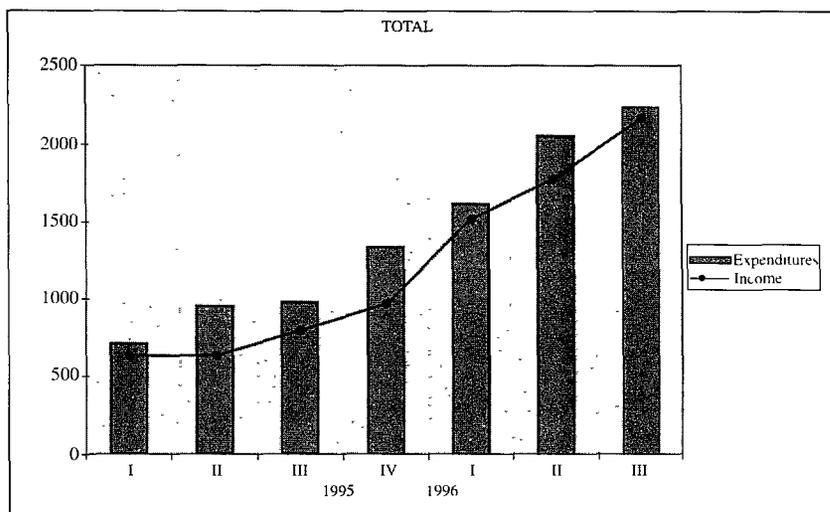
MEXFAM developed its financial monitoring capabilities in three phases. During the first phase, quality control measures were established for information already available; including number of services provided and income generated by service, by service provider, and by clinic. During the second phase, costs, the composition of costs by type of service, break-even points, and use of installed capacity were calculated. During the last phase all clinic managers and

selected service providers were trained to understand and use financial information for decision-making purposes.

By means of this process MEXFAM determined that clinic revenues had been increasing consistently over time. 1992-1994 were years of preparation and investment. Only in 1995 was there a positive balance in some clinics. One important achievement was that in 1997, the global level of financial sustainability reached was higher than the break-even point (104%), including all of the clinics. This trajectory is shown in **Graph 3**.

Due to the income generation strategies, currently 50% of the clinics are currently able to totally cover their operational costs, including payroll. 33% cover more than 90% of their costs, and only two of the twelve clinics cover less than 90% of their costs, but even these have a level of cost recovery greater than 80%. Five of the clinics have already begun to produce profits which are used to maintain the provision of social services in their catchment areas.

GRAPH 3
FINANCIAL BALANCE OF MEDICAL SERVICES CENTERS MEXFAM,
MEXICO. 1995-1996.



Several lessons have been learned by MEXFAM which ensure the success of its clinics. The key to success, according to MEXFAM, is to have a solid presence in the community prior to the installation of a clinic. This allows the institution to understand in advance, the health needs of the community, identify the services to be offered, and to assure adequate demand for services via a network of health promoters and physicians. Regarding cost control, it is important to carefully analyze medical equipment needs, avoiding investments in expensive pieces of equipment which are only used sporadically. It is also necessary to conduct a feasibility study and develop a business plan for each site, taking into account availability of local technical support prior to investing. MEXFAM's experience also underscores the importance of undertaking an analysis of the competition in order to take identify comparative advantages in service delivery and to maintain competitive prices. Having a knowledge of the competition also allows the organization to identify needs which have not been satisfied by other existing organizations. It is also necessary to train personnel in the use of information on costs, installed capacity, business plans, marketing plans, quality of care and logistics. The terms for contracting personnel are also very important, particularly in the case of physicians, as they must be willing to work in accord with institutional objectives. Aspects which require constant monitoring include: quality, the client profile, promotional efforts, demand for services, the financial balance of each clinic, and the costs of each clinic and of the clinics overall.

The key to success, according to MEXFAM, is to have a solid presence in the community prior to the installation of a clinic. This allows the institution to understand in advance, the health needs of the community, identify the services to be offered, and to assure adequate demand for services via a network of health promoters and physicians

3. Laboratory services, mini-pharmacies and ultrasound.

Beginning in 1982, CEMOPLAF has implemented a number of strategies for cost-recovery and to improve the self-sufficiency of its family planning services. The main strategies include: clinic-based laboratories, ultrasound, and small pharmacies. Below the organization's experience in these three areas is described.

a. Laboratories

CEMOPLAF has thirteen laboratories in Ecuador. One of its priorities is to reach 75% self-sufficiency in 1997. With technical assistance from the INOPAL project of the Population Council and from FHI, CEMOPLAF studied the profitability, quality and safety of these laboratories. Eight of the thirteen laboratories were selected to be included in the study. More than 2,800 tests were observed, with an average of 175 per laboratory technician.

The study confirmed the high profitability of laboratory services for generating organizational revenues. All of the laboratories studied showed net profits between 13 and 77%. The average profit was approximately 47%. Fertility tests for

men were the most profitable, contributing approximately a dollar per test. Other tests produced 25 to 38 cents per test. These results are presented in **Table 7**.

The most common problem related to the quality of the services was the insufficient use of reagents and adhesives in the preparation of samples. The observer noted and corrected these problems prior to the end of the observation session. The most serious safety issues were the emptying of tubes by mouth, and the lack of preventive vaccines for workers.

TABLE 7
COST, REVENUE, PROFIT, AND LEVEL OF SELF-SUFFICIENCY
LABORATORIES. CEMOPLAF. 1997

| Exam | Cost US\$ | Revenue US\$ | Profit US\$ | %Self-Sufficiency |
|-----------|-----------|--------------|-------------|-------------------|
| Pregnancy | \$82,000 | \$86,170 | \$4,170 | 105 |
| Total | \$565,500 | \$650,000 | \$84,500 | 115 |

This study demonstrates the sale of laboratory services, even at below market price, can contribute to an improvement in institutional financial sustainability, and at the same time, make these services more accessible to populations with scarce resources. Given that laboratory services can be profitably incorporated into family planning services, CEMOPLAF has demonstrated that integrating family planning with other reproductive health services can be advantageous, from a financial perspective.

b. Mini-pharmacies.

As part of its self-sufficiency activities CEMOPLAF established 16 mini-pharmacies to sell drugs slightly below market prices, but higher than their cost. CEMOPLAF, with assistance from the Population Council's INOPAL project and FHI, carried out a study of 13 of these mini-pharmacies to identify the factors contributing to their profitability. The study consisted of an analysis of information on costs and revenues during the first six months of 1995. The results show that the principal factor affecting the profitability of the mini-pharmacies was an excessive accumulation of supplies in warehouses. Taking into account only the costs of supplies, profits of greater than 24.7% of the costs were generated. When taking into account institutional overhead, profits were reduced, almost completely, but the break-even point was still reached (costs=revenues) Finally, when including the total cost of supplies, institutional overhead, and storage costs, a serious outflow of resources is noted. These results are presented in **Table 8**.

The mini-pharmacies basically stored prescribed drugs for CEMOPLAF clients. Eleven of the thirteen mini-pharmacies had an excess of stock in its warehouse of at least one drug, and the cost of over-stock ranged between US\$9.00 and US\$174. The excessive levels of inventory ranged between one months supply to several years worth, based on sales volumes for the product at the time of the study. If overstocking were eliminated, monthly losses would be reduced 21 percentage point. If this excess were to be reduced in three months, the expected reductions in losses would be even greater.

The results show that the principal factor affecting the profitability of the mini-pharmacies was an excessive accumulation of supplies in warehouses

TABLE 8
PROFIT/LOSS MARGIN BY TYPE OF COST
PHARMACIES, CEMOPLAF, ECUADOR

| Costs | Profit/Loss |
|----------------------------|-------------|
| Supplies and Institutional | 0.6 |

Based on these results, some clinics increased their profits by reducing personnel and stock levels of drugs. Managers are now trying to improve financial performance by adding products which are more profitable, and selling them at market prices.

4. Integration of services as an income-generation strategy.

INPPARES designed a strategy to inform clients of its clinics about their own reproductive health needs, and to stimulate demand for the services it offers. The strategy consisted of an interactive pamphlet which the users of a clinic could utilize to decide whether or not they needed additional services. Based on an algorithm developed in Mexico and Guatemala (Vernon and Ottolenghi, 1996), the pamphlet asked the client if 1) she had a cancer screening visit in the last year; 2) she or her partner had STD symptoms; and 3) she had other reproductive health problems. The pamphlet provided the client with information about the appropriate services for these health problems.

The strategy was tested during 20 days of clinic operation between October and November, 1997 and 20 days of clinic operation when the strategy was not used served as a control period. The purpose of the study was to determine if the interactive pamphlet incremented service utilization and clinic revenues.

The results of this experimental study show that the volume of services in the intervention group was greater than that of the control group. The intervention proved effective, increasing significantly the number of services sought by 13%, and

the average amount paid by 20%, in terms of volume of services and sales on the days compared.

With the introduction of the interactive pamphlet, INPPARES showed that its clinic, Patres, was able to increase services sought by new clients, and by 64% for overall visits to the clinic in the subsequent 30 days.

The observed changes in services purchased by clients suggest that the intervention significantly improved: a) the awareness of users with regard to the reproductive health services offered by the clinic, and/or, b) awareness of clients in terms of their own reproductive health needs. Revenues increased by 28% for first visits, and 67% for the 30 day follow-up period. If the observed tendency were to be maintained for one year, INPPARES could generate \$42,000. This is a considerable return on the investment, which would be easily sustainable over time. The results of the study convinced INPPARES' managers that the interactive pamphlet should be used on a routine basis, and they have made provisions for its reprinting in their 1998 budget. Currently, the pamphlet is being used in INPPARES' 11 clinics in Peru. Also, INPPARES is currently considering utilizing the pamphlet to capture new users using family planning promoters that conduct

educational activities in the community and who could distribute the pamphlet to potential users outside the clinics.

Discussion

The research presented shows advances in knowledge of the mechanisms by which reproductive health service delivery institutions can achieve financial sustainability. A better understanding now exists of the different alternatives institutions have at their disposal to set fees for their services, and a methodology has been presented that must be replicated for determining the impact on demand of price increases. The research discussed in this document brings together the experience of cost analyses as well. During the past few years, methodologies for determining costs have been developed as well as the institutional capacities for utilizing this information. These studies also show a large accumulated experience in the design and implementation of alternative strategies for the generation of revenues.

Organizations carry out operations research for three principal reasons: 1) to achieve operational control of their daily activities, 2) to make administrative control more effective, and 3) to plan and to program.

In order to achieve administrative control of programs it is necessary to know the answers to questions such as: What are

the volume of services and total revenues for a specified period? What is the cost of each service? What should the price be for each service? and What is the revenue that each service can generate? When organizations seek to obtain operational control of their daily activities, they must know their markets, including the consumer and the competition. Based on this information, the market can be segmented to define which population and which needs will be served. The ability and willingness to pay of consumers are also assessed, as done by APROFE and CEMOPLAF. The competition is studied, as was done by MEXFAM.

On the other hand, operations research has been used to achieve an optimal use of available resources. This is achieved through the interaction of the different units of the organization and its resources. One example of this type of research is that conducted by MEXFAM; which, through the development of a clinical financial monitoring systems strengthened the interaction between its different organizational departments. MEXFAM illustrates an experience in which the different organizational units interchange information and establish feedback mechanisms between themselves, in coordination of activities as a means to a common end. Finally, various examples of the use of operations research for strategic planning and programming have been presented. The experience of FEMAP in the use of cost studies to reduce excessive expenditures, lower prices and achieve higher sales volumes is a clear example of the use of operations research for long-term decision-making. The tools, and above all, the data, necessary to simulate alternative demographic, programmatic, and economic

The research presented shows advances in knowledge of the mechanisms by which reproductive health service delivery institutions can achieve financial sustainability

scenarios which affect and/or are influenced by organizations are now available.

It is possible to determine if a certain degree of managerial development has been achieved in an organization to the extent to which a culture of information exists, and information is utilized. A mature, well-developed organization is that in which information is used and in which service-delivery, personnel, and the results and impact of its activities are continually evaluated. The development of a culture of information requires: 1) improvements in information (data) collection, flow, and analysis; 2) investment in human capital, i.e., training, so that staff understand how the organization functions; and 3) management, i.e., leadership that can see what information is needed and why.

Research Priorities

Listed below are suggestions for the research agenda of the future:

1) The studies on willingness to pay and price elasticity done by CEMOPLAF should be replicated. This will allow for a test of the predictive validity of this methodology in different contexts and for a generalization of its use in Latin America. The methodology should be tested with different types of programs (CBD vs. clinic environments); among among populations of different socio-economic levels.

2) Once the predictive validity of the willingness to pay surveys are tested in terms of the impact of price increases on demand, manuals should be developed for the application of the methodology. These manuals should be in the form of simple guides geared towards program adminis-

Organizations carry out operations research for three principal reasons: 1) to achieve operational control of their daily activities, 2) to make administrative control more effective, and 3) to plan and to program

| Purpose of operations research | Types of research |
|--------------------------------|--|
| <p>Administrative control</p> | <p>Break-even points Strategies for control and reduction of costs Worker productivity</p> |

trators, emphasizing how to achieve a balance between income generation and utilization of services.

3) As pointed out by Janowitz (1994), to date little research has been done on exemption policies. There is not a sufficient basis on which to ensure that the use of payment exemption schemes would enable organizations to raise prices without affecting demand. It is possible that the negative impact of price increase could be minimized in the presence of an adequate payment exemption scheme.

4) In terms of price elasticity, calculations for some services have been presented in this report. Elasticity of other reproductive health services should be calculated, and the principal factors affecting consumer preferences should be identified.

Cost

1) Simple and accessible manuals need to be developed which would facilitate the

institutionalization of cost analyses on a regular basis. Reproductive health service delivery organizations should conduct such studies at least once a year, at a low cost to the institution. The role of operations research is to develop instruments and manuals which facilitate this task. These guides should not just include the procedures necessary to implement cost studies, but also should describe the way in which the information should be used to optimize the administration of resources.

2) Strategies for cost reduction need to be evaluated. New ways to reduce supervision and training costs need to be tested. Ways in which to reduce waste, high administrative costs, and overstaffing should also be explored.

3) Program productivity, service delivery activity, and personnel performance all need to be evaluated. This will require creative proposals for the measurement of the outcomes of service delivery activities. Indicators of productivity should take into consideration not just the quantity of services provided or contraceptives distributed, but aspects such as quality of care and the social impact of the activities.

4) Operational norms and service delivery should also be analyzed. Unnecessary imposed costs must be identified, such as IUD revisits. Excessive follow-up visits are onerous for the health system as well as for consumers. By eliminating medical barriers that add additional costs to the provision of services, operations research can make a contribution to program improvement.

Income generation strategies

1) Profitable services in new environments should be identified. Although there is no universal formula for what services to offer, it is possible to identify that some services, such as laboratory services, ultrasound, and pharmacies have a high probability for being able to help generate revenues in the majority of Latin American countries.

2) The cost-effectiveness of income-generating strategies should be assessed, including the social benefits that they provide. Cost-effectiveness should be measured as a function of the benefits offered by a service and compared with the benefits that would be achieved utilizing the same resources in a different way.

Market analyses

1) Institutional capacity to conduct analyses of their competition should be developed. The assessment of the quality and the prices of services provided by competitors and strategies to optimize comparative advantages of reproductive health service delivery institutions is essential.

2) Institutional capacity to study actual and potential markets and market segmentation should also be fostered. Methodological manuals must be tested and made available so that organizations can take the initiative in this area and

conduct annual assessments with their own resources.

3) As part of market segmentation activities, organizations should develop their ability to assess the health needs of their target populations. They should be able to identify other health needs of their regular clientele, identify new opportunities for marketing and develop adequate strategies to offer new services to the populations they can reach.

4) The ability to conduct basic analyses such as: a) assessment of break-even points, b) feasibility studies for new services, and c) sales potential, should all be institutionalized.

Operations research has made important contributions in the past twenty years. It has made it possible to answer such basic questions as: Is it possible to charge for family planning services? or, What is the profit margin? Currently, research can provide the answers to much or complex questions like: What services should be offered? What is the impact of an increase in prices? There is still a long way to go to answer all the crucial questions affecting programs in Latin America today, while at the same time disseminating available knowledge to the institutions that need it.

Operations research has made important contributions in the past twenty years. It has made it possible to answer such basic questions as: Is it possible to charge for family planning services? or, What is the profit margin?

There is still a long way to go

Este libro se terminó de imprimir en noviembre de 1998 en los talleres de Espiral Editora, S.A. de C.V., Aniceto Ortega 817-301 Col. del Valle, México, D.F., la edición constó de 2,000 ejemplares.