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The Institutionalization of Operations Research and Program Evaluation Capabilities in an Ecuadorian Family Planning Organization

FINAL REPORT

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THE POPULATION COUNCIL

INOPAL II

FINAL REPORT

The Institutionalization of Operations Research and Program Evaluation Capabilities in an Ecuadorian Family Planning Organization

(CI93 19A)

CENTRO MEDICO DE PLANIFICACION FAMILIAR (CEMOPLAF)
Quito, Ecuador

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ABSTRACT

CEMOPLAF of Quito, Ecuador is a private, non-profit family planning and women's health organization It operates twenty clinics, a rural CBD and a sterilization program USAID will stop funding CEMOPLAF in 1997 CEMOPLAF's survival will depend on increasing self-sufficiency beyond the level of 70% achieved in 1993 As part of its survival strategy, CEMOPLAF wished to institutionalize the ability to conduct operations research in the areas of cost analysis, cost control and recovery and income generation

The Population Council in collaboration with Family Health Internation (FHI) and The Futures Group trained a core group of CEMOPLAF employees in basic research techniques, family planning indicators, cost analysis and market research A larger group of administrators and clinic managers received less in-depth training in the same areas to help them become more sophisticated consumers of OR data Two research projects were conducted by CEMOPLAF headquarters staff with assistance from INOPAL and FHI The first study modeled the market for and profitabability of offering ultrasound services in CEMOPLAF clinics The second studied client's ability to pay for reproductive health services As a result of the ultrasound study, CEMOPLAF purchased machines and established the service in three clinics As a result of the ability to pay study, CEMOPLAF increased prices an average of 22%

I INTRODUCTION

CEMOPLAF of Quito, Ecuador is a private, non-profit family planning and women's health organization It operates twenty clinics, a rural CBD and a sterilization program USAID will stop funding CEMOPLAF in 1997 CEMOPLAF's survival will depend on increasing self-sufficiency beyond the level of 70% achieved in 1993 As part of its survival strategy, CEMOPLAF wished to institutionalize the ability to conduct operations research in the areas of cost analysis, cost control and recovery and income generation

The Population Council in collaboration with Family Health Internation (FHI) and the Futures Group Options II project trained CEMOPLAF employees in basic research techniques, family planning indicators, cost analysis and market research and helped them to conduct OR studies of their own

Objectives Specific objectives of the institutionalization project included

1 To train a core group of 4-6 CEMOPLAF staff (hereafter referred to as the "core group") in research techniques, which will enable the institution to produce information for internal decision-making

2 To train CEMOPLAF executives and directors of regional offices in using research findings to make management decisions

3 To carry out approximately six studies in which the research techniques will be applied to practical issues, and to use the results of these studies to help inform CEMOPLAF management decisions

II RESULTS

Training A core group of headquarters staff received in-depth research training This group consisted of the agency Executive Director, an accountant, an Evaluation Specialist, and

a computer operator All core group training was carried out in CEMOPLAF Quito headquarters and in agency clinics Administrators, clinic managers and some board members also received a less intensive course covering many of the same topics as the core group course The objective of training clinic managers, etc was to make them more sophisticated users of data in general and OR in particular Training included

Research Basics Seventeen staff members received 10 days of instruction in research design and analysis Contents included basic principles of sampling, experimental design, and survey research, and family planning indicators Participants wrote research proposals, collected data at two clinics on program continuation rates and learned to use the program Epi-Info The course was taught by a local research consultant with an extensive background in family planning and survey research

Strategic Planning Options II and INOPAL II staff taught a three day strategic planning course The course explained how to use DHS data in identifying unmet need, in segmenting the family planning market by provider, establishing the characteristics of each segment, and translating the DHS sample survey data into numerical estimates of segment size, unmet need etc

Cost Analysis FHI taught a three day seminar on cost-analysis techniques to four core staff The seminar focussed on standard techniques of cost estimation Upon completion of the course, CEMOPLAF staff independently conducted a study of clinic services costs Staff also gathered the cost data for another OR project (Introduction of DMPA)

Computers Clinic managers and core staff were trained in the use of PC operating systems (UNIX and DOS) and in use of CEMOPLAF's computerized MIS (The agency installed

a computer network linking all clinics with headquarters) All staff also were trained in the spreadsheet, Quattro-Pro Core staff also received three days training in SPSS and Harvard Graphics

Research As part of their training, core staff conducted and analysed a contraceptive continuation rate study, conducted a cost-analysis of CEMOPLAF clinical services, and collected cost data for an OR project on DMPA In addition to these exercises, core staff designed and analysed two sustainability research projects with INOPAL funding and technical assistance The first study evaluated clinic capabilities and modeled potential demand and profits for ultrasound services The second study assessed CEMOPLAF clients' "ability to pay" for products and services Technical assistance for both studies was provided primarily by FHI with a subcontract from The Population Council

STUDY 1 IMPROVING FINANCIAL SUSTAINABILITY THROUGH INCOME GENERATION AN APPROACH FOR ESTIMATING PROFITABILITY OF ULTRASOUND

I INTRODUCTION

During the past 30 years, non-governmental organizations (NGOs) have played a major role in providing family planning services in much of Latin America As shown in Table 1, NGOs are an important source of contraception in the region

Donors have supported NGOs with equipment, cash, contraceptive commodities and technical assistance But recent trends in donor assistance show that resource flows to Latin

America are declining in real terms, while support is increasing for sub-Saharan Africa, the Middle East and parts of Asia, where rates of population growth are higher Moreover, NGOs are receiving a smaller share of donor funds targeted to Latin America (UNFPA, 1993) Consequently, financial sustainability is a major preoccupation of Latin American NGOs

TABLE 1 Percentage of Current Users of Family Planning who Obtain Services from an NGO, by Country

Country	Year of Survey	Percent Obtaining Services from NGO
Colombia	1990	32 1
Dominican Republic	1991	11 6
Ecuador	1989	15 1
El Salvador	1988	12 6
Guatemala	1987	24 8
Honduras	1991	24 2
Paraguay	1990	9 6
Peru	1992	6 0

Source Demographic and Health Surveys, various years

Income generation is one approach to increasing financial sustainability Income generation can take many forms, including soliciting funds from new donors, increasing prices of existing services, and establishing new services and products Several NGOs (most notably Profamilia, Colombia) have attempted to increase income through a strategy known as "diversification", in which the NGO seeks to produce related services at a profit (Castro V et al, 1991) Examples of diversification include setting up laboratories and on-site pharmacies,

or offering reproductive health services such as colposcopy or diagnostic laparoscopy

Before iversifying, programs must assess the potential market, and estimate the costs and potential income associated with any new service Without such information, large investments in staff training and equipment can be wasted on services that fail to produce profits This paper reports on a study that was carried out to help managers of CEMOPLAF, an Ecuadoran family planning NGO, decide whether to establish ultrasound services

Program Setting The Centros Medicos de Orientación y Planificación Familiar (CEMOPLAF), based in Quito, Ecuador, has defined as its mission to provide quality reproductive health services to low-income women CEMOPLAF's service outlets include 19 clinics, a community-based distribution (CBD) program, a network of nearly 700 associated medical professionals, and a growing voluntary surgical contraception (VSC) program

One of CEMOPLAF's objectives for the future is to achieve financial self-sufficiency USAID/Ecuador has in the past provided funding for CEMOPLAF's central administration and for operating expenses of some of its clinics But USAID is gradually phasing out assistance to CEMOPLAF, and after 1997 will provide only limited commodity support and technical assistance

In response to anticipated reductions in USAID support, CEMOPLAF produced a sustainability strategy which focuses on increasing institutional income through several different mechanisms One of the agency's first steps was to establish an ultrasound service in its pilot clinic in Quito in 1992 This service has been highly successful, and CEMOPLAF managers wanted to introduce ultrasound services in other locations The agency was prepared to purchase

ultrasound machines for up to 10 clinics, however, CEMOPLAF managers wanted to offer ultrasound only in those locations where the service could produce profits, which would be used to subsidize family planning clients

Objectives The overall objective of the study was to determine which CEMOPLAF clinics could profitably produce ultrasound services Specific objectives included

(1) to assess the suitability of each clinic as a possible site for ultrasound services, including adequacy of physical infrastructure and staff capabilities,

(2) to estimate the potential demand for ultrasound services in the first year, in each clinic,

(3) to project income from ultrasound services in each clinic during the first five years of operation,

(4) to estimate costs of providing ultrasound services in each clinic during the first five years of operation,

(5) to determine break-even points and estimate total profits in the clinics which were determined to be the best candidates for providing ultrasound services

II METHODOLOGY

Assessment of clinic suitability A questionnaire interview was conducted with directors CEMOPLAF's 19 clinics Directors were asked whether they wanted to offer ultrasound in their center The questionnaire elicited information on (1) investments in staff and clinic infrastructure needed for the clinic to offer ultrasound, (2) current demand for ultrasound services among clinic clients, and (3) prices charged by competing providers of ultrasound in the same area as the clinic

The responses were used to classify the 19 clinics into two categories, according to the suitability of staff and infrastructure Centers were classified as "high" if physical space was available for the ultrasound machine and if the director knew of a trained specialist in the area who could perform ultrasound procedures on a contract basis The rationale for contracting a specialist rather than using CEMOPLAF personnel was that high financial and time costs of ultrasound training was unacceptable to CEMOPLAF management Centers were classified as "low" if they lacked either the available space for the machine or the trained specialist

Estimation of demand Information on demand for ultrasound does not exist in Ecuador As a proxy measure of likely demand, we assumed that the rate of ultrasound procedures per hundred gynecology and prenatal visits in the existing ultrasound service could be extrapolated to other potential ultrasound sites The total number of ultrasound procedures in the existing service is the sum of referrals from CEMOPLAF clinics and associated physicians, referrals from other institutions or medical professionals outside of the CEMOPLAF system, and walk-in clients If other Quito clinics established ultrasound services, referrals to the existing service from other CEMOPLAF sources would be reduced Therefore, we separated out those referrals from other CEMOPLAF clinics and associated physicians

The rate was multiplied by the number of prenatal and gynecology visits in other clinics (taken from CEMOPLAF service statistics) to yield estimates of potential demand in the first year Five-year demand projections were then made under two assumptions of future demand growth a low-growth scenario based on the projected increase in the population of Ecuadoran women of reproductive age, and a high-growth scenario which reflects rates of growth of CEMOPLAF gynecology and prenatal services

Income and Costs Income was estimated by multiplying projected procedures by the average price charged by competitors in each area Costs of establishing ultrasound services in each clinic were estimated by summing the costs of supplies, contract wages paid to ultrasound operators, improvements to clinic infrastructure, additional secretarial staff, promotion, and depreciation of ultrasound machines and related equipment Annual profits or losses were calculated by subtracting costs from income Break-even points were determined by establishing the length of time and the number of ultrasound procedures needed for each clinic to cover fixed costs of operation

III RESULTS

Suitability of Staff and Infrastructure Three clinics were excluded from the survey, two because of low client loads, and one because it already offered ultrasound All 16 of the directors interviewed wished to offer ultrasound services in their clinics However, as shown in Table 2, only four of the centers had the staff and infrastructure needed to merit a rating of "high suitability" for ultrasound services

TABLE 2 Staff and Infrastructure Capabilities for Offering Ultrasound

CENTER/NO	AVAILABLE SPACE	LOCAL SPECIALIST	SUITABILITY
QUITO 2	1	0	MEDIUM
STO DOMINGO 3	0	1	LOW
QUEVEDO 4	1	0	LOW
GUAYAQUIL 5	2	1	HIGH
ESMERALDAS 6	2	1	HIGH
QUININDE 7	2	0	LOW
IBARRA 8	2	1	HIGH
TULCAN 9	0	1	LOW
RIOBAMBA 10	2	1	HIGH
LATACUNGA 11	1	0	LOW
VENTANAS 12	2	0	LOW
GUARANDA 13	1	0	LOW
QUITO 14	0	1	LOW
OTAVALO 16	1	0	LOW
STO DOMINGO 18	2	1	HIGH
QUITO 21	2	0	MEDIUM
QUITO COP 22	1	0	MEDIUM
	2=9m^2 or more 1=4m^2 to 9m^2 0=no space	1=knows spec 0=does not know spec	

Source Survey of CEMOPLAF Clinic Directors

Three clinics initially received a rating of "low", because their directors did not know an ultrasound specialist We subsequently reclassified them as "medium" because all three clinics are situated in Quito, where it was assumed that ultrasound specialists could be found

Demand for Ultrasound Services In its first year of operation, CEMOPLAF's existing ultrasound service performed a total of 2,865 procedures Approximately two-thirds (1,858) were referrals generated within the clinic or from other non-CEMOPLAF sources, while one-third of these were referrals from other CEMOPLAF clinics or associated physicians In the same year, gynecology and prenatal clients made a total of 10,035 office visits to the CEMOPLAF clinic where the ultrasound service is located Table 3 shows how these data were used to calculate a factor to project demand for ultrasounds in other CEMOPLAF clinics

TABLE 3 Derivation of Factor to Estimate Baseline Demand

TYPE OF REFERRAL	NO OF EXAMS		NO OF EXAMS AS % OF TOTAL ANNUAL GYNECOLOGY AND OBSTETRIC VISITS (10,035)
REFERRALS WITHIN CLINIC		502	05
REFERRALS FROM OUTSIDE			
PRIVATE PHYSICIANS	679		
PUBLIC SECTOR (MOH, IESS)	192		
UNKNOWN SOURCE	183		
TOTAL OUTSIDE REFERRALS		1054	11
SELF-REFERRAL (WALK-IN CLIENTS)		302	03
TOTAL		1858	19

Source CEMOPLAF Service Statistics

Private physicians produced the largest number of referrals to the existing ultrasound services, followed by CEMOPLAF physicians from the adjoining clinic, and walk-in clients

Taking these referrals as a percentage of prenatal and gynecology visits in the center, a total of 19 ultrasounds were performed for every 100 prenatal and gynecology visits This factor is used in Table 4 to estimate demand for ultrasounds in other CEMOPLAF clinics

TABLE 4 Annual Prenatal and Gynecology Visits (1993) and Estimated Number of Ultrasounds in First Year, by Clinic

CENTER AND NO	PRENATAL VISITS A	GYNECOLOGIST VISITS B	ESTIMATED ULTRASOUNDS (A+B) x 19
ESMERALDAS 6	1,940	5,799	1,470
QUITO 2	826	5,250	1,154
STO DOMINGO 3	1,740	4,204	1,129
QUITO 21	727	4,980	1,084
LATACUNGA 11	1,139	4,087	993
QUEVEDO 4	633	3,914	864
STO DOMINGO 18	907	1,609	478
TULCAN 9	494	1,471	373
IBARRA 8	754	1,081	349
RIOBAMBA 10	1,526	237	335
GUARANDA 13	287	1,440	328
QUITO 14	804	859	316
QUITO COP 22	1,564	76	312
VENTANAS 12	333	1,276	306
QUININDE 7	347	619	184
OTAVALO 16	483	193	128

If the demand estimates for the two Santo Domingo clinics are combined (CEMOPLAF managers indicated they would not put two ultrasounds in such close proximity) then the clinics fall out into two groups six in which we projected 1000 or more ultrasounds per year, and ten with 400 or fewer per year The following six clinics therefore emerge as the top candidates for ultrasound services Esmeraldas, Quito 2, Santo Domingo 3/18, Quito 21, Latacunga and Quevedo Combining these results with the findings of the analysis of clinic capabilities (Table 2), the first four of these clinics would appear to be the most suitable sites for offering ultrasound

Estimated Income The survey of clinic directors revealed substantial variation in prices charged by competing ultrasound providers in CEMOPLAF catchment areas Average market prices ranged from a low of $6 82 in six of the centers, to a high of $15 91 in Ibarra The range of prices in the group of six "semifinalist" clinics was narrower, from $6 82 to $9 09 Estimated income from ultrasound services for these clinics is presented in table 5 We have included CEMOPLAF's existing ultrasound (Quito 1) in the income projections, but have reduced the number of estimated ultrasounds in that facility to reflect lower expected referral rates from other Quito clinics

TABLE 5 Estimated revenue from ultrasound services in first year of operation, for the seven "high-demand" clinics

CENTER AND NO	EST NO OF ULTRASOUNDS	PRICE PER ULTRASOUND	EST YEAR 1 INCOME (US$)
QUITO 1	2,400	11 36	27,273
STO DOM 3/18	1,600	9 09	14,545
ESMERALDAS 6	1,500	9 09	13,636
QUITO 2	1,200	6 82	8,182
QUITO 21	1,100	6 82	7,500
LATACUNGA 11	1,000	6 82	6,818
QUEVEDO 4	900	9 09	8,182
TOTAL	10,200		86,136

Table 5 shows that CEMOPLAF's existing ultrasound service would earn the most income in the first year, even with a substantial reduction in referrals from other Quito clinics Income projections at Santo Domingo and Esmeraldas are lower, because of lower market prices and fewer projected clients

Costs of Establishing Ultrasound Services Table 6 presents estimates of costs to CEMOPLAF of providing ultrasounds in the seven clinics Variable costs will be higher in clinics where demand is projected to be higher, because by definition, variable costs increase as output increases Annualized fixed costs are higher in the pilot clinic (Quito 1) because physicians who perform ultrasounds receive a salary in addition to the per-procedure payment Variations in start-up costs reflect local differences in the cost of advertising and the extent of clinic remodeling work required

TABLE 6 Estimated costs of ultrasound services in first year of operation, for the seven "high-demand" clinics

CENTER AND NO	TOTAL VARIABLE COSTS	ANNUAL FIXED COSTS	START-UP COSTS	TOTAL COSTS
QUITO 1	8,950	10,928	2,273	22,151
STO DOM 3/18	4,876	7,119	2,091	14,086
ESMERALDAS 6	4,571	7,119	2,091	13,781
QUITO 2	2,839	7,119	2,818	12,776
QUITO 21	2,602	7,119	2,609	12,330
LATACUNGA 11	2,365	7,119	352	9,836
QUEVEDO 4	2,743	7,119	315	10,177
TOTAL	28,946	53,642	12,549	95,137

Profitability and Break-even Analysis Table 7 presents estimates of profits or losses from ultrasound services in the seven clinics, assuming annual increases in demand of 10 percent per year This rate of increase roughly parallels the 11 percent growth rate in gynecology and pre-natal visits observed over the past four years (CEMOPLAF service statistics, 1990-1993) Since costs are fairly stable across clinics (except for Quito 1), profits and time to break even are mainly functions of income growth, which depends in turn on estimated demand Only two of the clinics break even in the first year (as evidenced by positive net income), however, by the fifth year, all clinics except Latacunga are profitable But when the analysis focuses on cumulative five-year profits (see the final column of Table 7), only Quito 1, Santo Domingo and Esmeraldas earn enough income to more than cover costs

TABLE 7 Annual and Total Profits or Losses for the seven "high-demand" clinics (high-growth projection)

CENTER/NO		YEAR1	YEAR2	YEAR3	YEAR4	YEAR5	TOTAL
QUITO	1	5,116	9,220	11,235	13,452	15,890	54,913
STO DOM	3/18	459	3,517	4,580	5,750	7,037	21,343
ESMERALDAS	6	-146	2,852	3,849	4,946	6,152	17,653
QUEVEDO	4	-1,996	-1,137	-538	120	844	-2,707
QUITO	2	-4,592	-1,240	-652	-5	706	-5,783
QUITO	21	-4,829	-1,730	-1,191	-598	54	-8,293
LATACUNGA	11	-3,017	-2,220	-1,730	-1,191	-598	-8,755
TOTAL		-9,005	9,262	15,553	22,474	30,085	68,371

Table 8 gives a more conservative picture of potential income from ultrasound services These estimates assume an annual growth rate of 3 percent, consistent with projected increases in the cohort of Ecuadoran women aged 15-49 (United Nations, 1991) Although the first-year profits are the same as in table 7, profits in subsequent years are much lower total profits from all clinics over five years decline from $68,371 to $22,852 If we compare only the three profitable clinics (assuming that CEMOPLAF would not put machines in clinics that could not produce profits), the total five-year profit drops from $93,909 to $64,419

TABLE 8 Annual and Total Profits or Losses for the Seven "high-demand" clinics (low-growth projection)

CENTER/NO		YEAR1	YEAR2	YEAR3	YEAR4	YEAR5	TOTAL
QUITO	1	5,116	7,938	8,504	9,087	9,688	40,334
STO DOM	3/18	459	2,840	3,139	3,446	3,763	13,647
ESMERALDAS	6	-146	2,217	2,497	2,786	3,083	10,438
QUEVEDO	4	-1,996	-1,517	-1,349	-1,176	-998	-7,036
QUITO	2	-4,592	-1,614	-1,449	-1,279	-1,103	-10,037
QUITO	21	-4,829	-2,073	-1,921	-1,765	-1,605	-12,193
LATACUNGA	11	-3,017	-2,531	-2,394	-2,252	-2,106	-12,300
TOTAL		-9,004	5,260	7,027	8,847	10,722	22,852

IV DISCUSSION

The results of this study provide clear guidance to CEMOPLAF managers on where the institution could profitably operate ultrasound services We have produced two scenarios that estimate five-year profits of between $65,000 and $94,000, by continuing with the existing ultrasound service at Clinic 1 in Quito, and by adding ultrasound machines in Santo Domingo and Esmeraldas

When we presented these results to CEMOPLAF management, they requested additional analyses based on two possible modifications First, they questioned whether placing the existing (partially depreciated) ultrasound machine in one of the unprofitable clinics might reduce fixed costs enough to allow the clinic to turn a profit Clinic 21 in Quito was selected over Clinic 2, mainly because it would divert fewer referrals from the pilot clinic Second, CEMOPLAF managers wanted to analyze the impact on profitability if Quito 1 received a more costly

ultrasound machine with additional diagnostic capabilities

Table 9 presents information on changes in profitability if these two modifications were made The top half of the table repeats data from Table 8, and compares them to profits earned under the new assumptions Higher fixed costs associated with the costlier machine would lower profits substantially in Quito 1, but this reduction would be partially offset by increased income from services in Quito 21 However, the need to replace Quito 21's fully depreciated machine in year four causes the clinic to incur losses in the final two years of the projection Overall profits from the four ultrasound services are approximately 20 percent lower under the new assumptions Profits in Quito 1 may be understated, though, because demand estimates have not been increased to reflect additional procedures that could be done with a more sophisticated ultrasound machine

TABLE 9 Changes in Profits in Clinics 1 and 21 (Low-growth Scenario), and in the Four Clinics Receiving Ultrasounds, by Type of Projection

CENTER/NO	YEAR1	YEAR2	YEAR3	YEAR4	YEAR5	TOTAL
	ORIGINAL PROJECTION					
QUITO 1	5,116	7,938	8,504	9,087	9,688	40,334
QUITO 21	-4,829	-2,073	-1,921	-1,765	-1,605	-12,193
4 CLINICS RECEIVING ULTRASOUNDS						52,225
	MODIFIED PROJECTION					
QUITO 1	716	3,538	4,104	4,687	5,288	18,334
QUITO 21	-926	1,830	1,982	-1,765	-1,605	-484
4 CLINICS RECEIVING ULTRASOUNDS						41,935

Given that the purpose of establishing ultrasounds is to improve CEMOPLAF's financial sustainability, what would the impact be on CEMOPLAF's overall level of cost recovery? In 1993, CEMOPLAF's total income from all sources was approximately $603,100 Total expenditures were $854,750, giving a cost recovery ratio of 70 5% Our conservative projection of total profits from ultrasound services over 5 years is approximately $65,000, or $13,000 per year Adding $13,000 to the income figure for 1993, would increase the cost recovery ratio to 72 1%, or an increase of 1 6 percentage points If the profit estimate from the high-growth scenario is used, annual profits increase from $13,000 to $18,000, which would increase CEMOPLAF's cost recovery ratio by 2 1 percentage points

Several other conclusions can be drawn from this study First, it should be noted that prior to the study, CEMOPLAF managers had been prepared to purchase up to 10 ultrasound machines The decision on where to place these machines would have been extremely difficult, given that all 19 clinic directors had expressed interest in establishing ultrasound services in their facilities In many programs, the overall objective of establishing a service like ultrasound would not have been made explicit, and the decision on where to situate machines likely would have been based on internal agency politics

In this case, CEMOPLAF managers had stated unequivocally that the key objective of ultrasound services was to generate profits The results of this study provided clear guidance on how many machines to purchase, and where to put them Therefore, by explicitly stating their objectives at the outset, and then carrying out a formal, well-documented research project to evaluate alternatives CEMOPLAF managers ensured that internal politics would not play a role in deciding where to offer ultrasound services

More generally, the results of this study point out the limits of any single intervention to increase financial sustainability Although annual profits from CEMOPLAF ultrasound services would not be insignificant in financial terms, it is obvious that adding this service alone will not solve CEMOPLAF's sustainability problem CEMOPLAF managers are well aware of the need to pursue simultaneously several complimentary approaches to financial sustainability, including cost containment, cost recovery and income generation As the agency continues to make progress in each of these areas, the cumulative impact on financial sustainability should be substantial

REFERENCES

Global Population Assistance Report 1982-1991 UNFPA, 1993

United Nations World Population Prospects 1990 United Nations Department of Economic and Social Affairs, 1991

Castro V , Rodrigo, et al "La Diversificacion es la Alternativa Financiera de la Planificacion Familiar" PROFAMILIA Vol 7 No 18, December, 1991

STUDY 2 AN ASSESSMENT OF CLIENT ABILITY TO PAY FOR REPRODUCTIVE HEALTH SERVICES

I INTRODUCTION

The Centros Medicos de Orientacion y Planificacion Familiar (CEMOPLAF), an Ecuadoran Non-Governmental Organization (NGO), finances its programs through a combination of donated resources and fees collected from clients In 1993, revenue from client fees covered 72% of CEMOPLAF's direct program expenditures, donors paid for the remainder of direct program expenditures, and also paid for CEMOPLAF's indirect and administrative costs

Funding from the U S Agency for International Development (USAID) - CEMOPLAF's major donor - is expected to decline in coming years CEMOPLAF managers hope to offset reductions in USAID support by gradually increasing prices for existing services, and by establishing new profit-generating services For this strategy to succeed, clients must be able to pay for the wide range of family planning and related health services

Before embarking on an ambitious effort to generate income, CEMOPLAF managers need information on the economic status of current CEMOPLAF clients An issue of special concern is the potential impact of price increases on the poorest of CEMOPLAF clients, some within the agency fear that pursuit of sustainability is incompatible with CEMOPLAF's stated mission of providing family planning services to poor women The results of this study should help to predict whether clients will in fact be able to pay higher fees, both for family planning services and for other profit-generating services

Objectives The objectives of the operations research included

1 To assess the economic status of women making visits to CEMOPLAF clinics,
2 To evaluate the affordability of current CEMOPLAF prices relative to client incomes
3 To determine whether clients' ability to pay for services varies across the 20 clinics operated by CEMOPLAF

II METHODOLOGY

Survey of Economic Status of CEMOPLAF clients Three basic approaches can be used to measure the economic status of individuals One alternative is to focus on income, which seeks to differentiate individuals based on their purchasing power A second approach uses information on client ownership of certain durable goods (housing, vehicles, appliances, etc) to develop proxy measures of wealth A third alternative utilizes data on consumption patterns to estimate the expenditures made by households

A questionnaire was developed and administered to a convenience sample of clients in all CEMOPLAF clinics during the months of March and April, 1994 The sampling scheme was non-probabilistic every client coming to the clinic was interviewed until 400 cases had been collected per clinic Interviewing was completed in a matter of days in clinics with high client volume, while some of the smaller clinics needed more than a month to accumulate 400 cases

The questionnaire incorporated elements of all three approaches to assessing economic status Clients were asked direct questions about family income, about ownership of certain durable goods, and about consumption of specific goods and services which in the Ecuadoran context would indicate that the household had discretionary income exceeding a level needed to cover basic necessities For example, a series of questions focused on household consumption of goods or services such as cigarettes, meat, beautician services, private education for children,

and private-sector health care The questionnaire also asked about education, number of living children, tenant or homeowner status, and motive for visiting the clinic

Within CEMOPLAF's overall pricing scheme, the role of non-family planning services is to produce income to subsidize family planning services for women who cannot afford to pay CEMOPLAF management believes that the socio-economic level of non-family planning clients is somewhat higher than that of family planning clients We used the Pearson Chi-square test of association to test for differences between the two client groups in terms of their "ability to pay"

Affordability of CEMOPLAF services Affordability refers to the relationship between the price of a good or service and the resources available to the person purchasing it Each clinic provided a current list of prices for all services and products offered This information was used to calculate average prices for family planning and non-family planning services We also calculated the price of a year of IUD use (including follow-up visits) and the price of a typical course of gynecological treatment (including laboratory tests)

Affordability of CEMOPLAF prices was assessed by dividing these index prices by annual client household income Affordability varies within clinics because clients at different income levels all pay the same prices To capture some of this variation, we compared price/income ratios for clients at the 20th percentile, the median, and the 80th percentile of the income distribution in each clinic

Variation in "Ability to Pay" Across Clinics Organizations like CEMOPLAF, which depend heavily on fee revenue, must pay close attention to pricing Ideally, prices in each clinic should be set in relation to the economic potential of the clientele We used data from the client survey to create a summary profile of economic status for each clinic Variables with several

categories were transformed into simple indicators portraying the situation in each clinic as a whole For example, the seven categories of educational attainment were collapsed into a single measure of the percentage of clients who had completed secondary school or higher The final product of this effort was a clinic profile database, which included 17 variables for each of the 20 clinics

To determine which clinics were similar in terms of client economic status, a hierarchical cluster analysis was performed using the procedure CLUSTER in SPSS The four variables selected for the model included the percentage of clients who reported that they received wages for work outside the home, the percentage that owned a refrigerator, the percentage that had consumed meat at least two of the previous three days, and median family income These variables were selected because they represent the three approaches to measuring economic status outlined above income and participation in the work force indicate client purchasing power, refrigerator ownership represents assets, and meat consumption is a common household expenditure

III RESULTS

Characteristics of Survey Respondents Table 1 provides basic descriptive information about the sample of women interviewed During the survey period, slightly fewer than half of all visits were made by women seeking family planning services, while the remainder of visits were made for other purposes, including gynecology, pediatrics, obstetrical care and general medicine Median educational attainment of all clients is some secondary schooling, but nearly 35% of clients had either completed secondary school or had attended a university or technical school Almost two-thirds of respondents reported having two or fewer living children

TABLE 1 CHARACTERISTICS OF CEMOPLAF CLIENTS	
CHARACTERISTIC	**PERCENT (N=6601)**
REASON FOR VISIT	
Family Planning	45 0
Non-Family Planning	55 0
EDUCATIONAL ATTAINMENT	
None	3 9
Some Primary	12 0
Completed Primary	24 4
Some Secondary	24 9
Completed Secondary	19 5
University or Technical	15 3
NO OF LIVING CHILDREN	
0	12 5
1	25 8
2	26 5
3 or more	35 1

Indicators of Ability to Pay for CEMOPLAF Services Table 2 summarizes responses of clients regarding ownership of assets, and household consumption patterns As shown in the third column, a substantial proportion of the clientele appears to be fairly well-off in economic terms nearly four clients in ten own their homes, and 44 6% own a refrigerator Almost a third of clients with school-age children send those children to private schools, and more than 70% of clients reported having consumed meat at least two of the previous three days Finally, mean family income was somewhat more than 4 million sucres annually, which roughly equates to US$ 2,000 at average 1994 exchange rates

TABLE 2 SELECTED INDICATORS OF ECONOMIC STATUS			
INDICATOR	**FAMILY PLANNING (N=2970)**	**NON-FAMILY PLANNING (N=3631)**	**ALL CLIENTS (N=6601)**
RESIDENCE TYPE (%) *			
Homeowner	36 8	41 0	39 1
Renter	29 9	25 0	27 3
Lives with Parents	33 3	34 0	33 7
OWNS REFRIGERATOR (%) *			
Yes	39 6	48 7	44 6
No	60 4	51 3	55 4
PRIVATE EDUCATION (%) *			
Yes	28 7	35 7	32 5
No	71 3	64 3	67 5
MEAT CONSUMPTION (%) *			
At least 2 of prev 3 days	66 9	75 9	71 9
Less than 2 of prev 3 days	33 1	24 4	28 1
MEAN FAMILY INCOME (**)			
Sucres per Year (000s)	3,960	4,572	4,296

Notes a single asterisk (*) indicates that the significance level of the Pearson Chi-square statistic was less than 0001 A double asterisk (**) indicates that the significance level of the t statistic was less than 0001

Table 2 also reports statistically significant differences between family planning clients and non-family planning clients on all six indicators Although the direction of the differences is consistent (i e , economic status of non-family planning clients is higher on all of the indicators) the magnitude of the differences may not be as great as suggested by the level of significance In studies with large sample sizes, small differences (with no real practical implications) may turn out to be statistically significant

What would be the financial outlay associated with the patterns of consumption shown

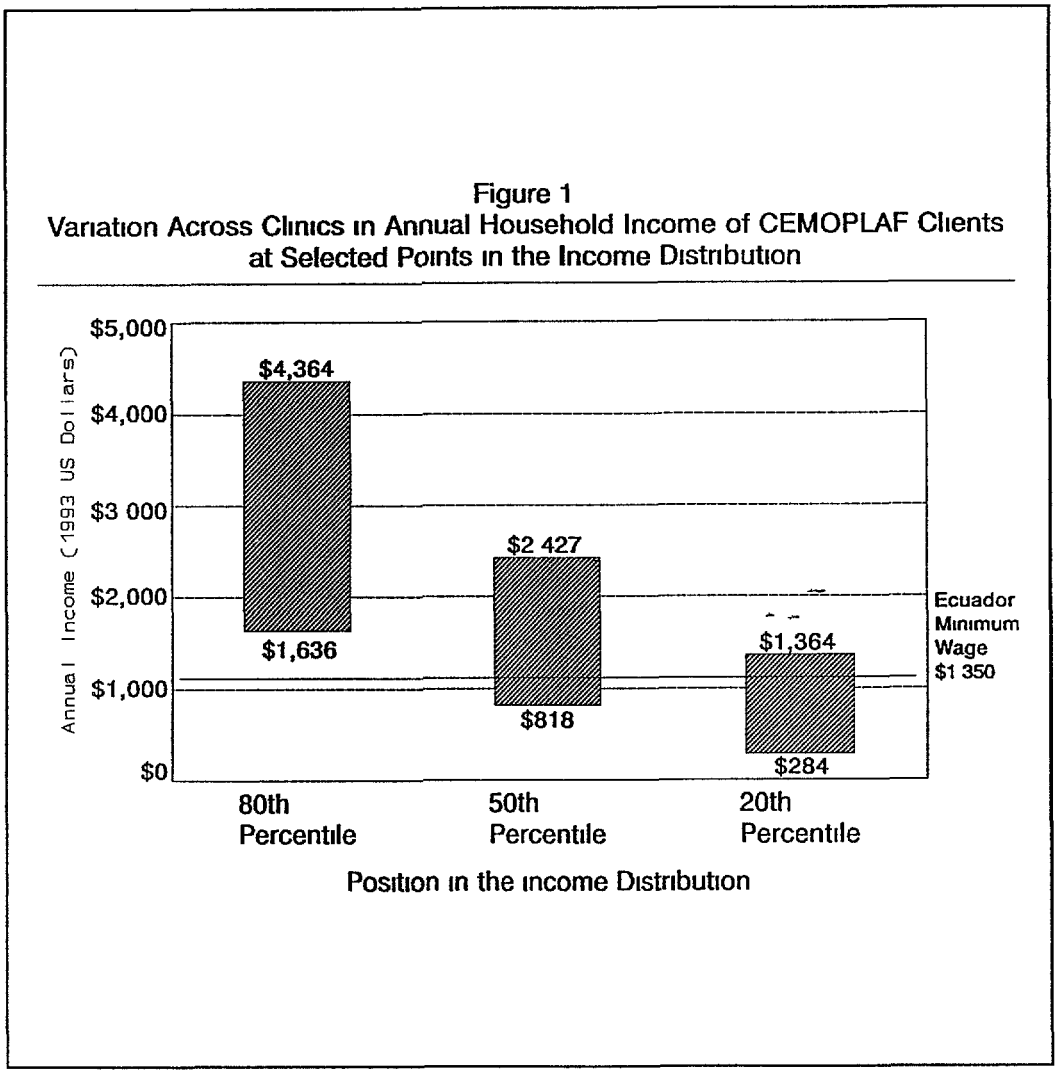
in Table 2? It is difficult to generalize about housing and refrigerators because of variation in the age and condition of both assets In the case of private education, tuition costs also can vary considerably, depending on the location and type of school As an approximation, CEMOPLAF senior staff estimated an annual cost of from $600 to $2,400, per student (de Vargas, 1994)

Regarding meat consumption, annual expenditure can be estimated using data from a recent study of food prices carried out by the Ecuadoran Ministry of Public Welfare (Pinto, 1994) The price of a single portion of meat ranges from $0 32 for fish to $0 25 for chicken Multiplying an average price of $0 29 per serving by the average family size of CEMOPLAF households (4 21 persons), and then by 66% of days of the year (240 days), the resulting annual cost would be $293 per year

A final example is client use of beautician services More than 70 percent of clients reported visiting a beauty salon at some time during the previous year The average annual expenditure was $5 17 per client Although this expenditure is inconsequential in relation to annual income, it is almost identical to the expenditure ($5 93) that a client would need to make to receive an IUD and follow-up care for one year at CEMOPLAF

Affordability of CEMOPLAF Services The purpose of this section is to examine the relationship between CEMOPLAF prices and client incomes CEMOPLAF's stated mission is to serve the poor, and a prevalent belief of many in is that most clients are low-income women Figure 1 summarizes information collected on client household income Each bar represents the range of incomes across clinics at a specified point in the income distribution For example, the first bar shows that for the relatively wealthy clients in each clinic (those at the 80th percentile), annual household incomes range from a low of $1,636 to a high of $4,364 The same

information is presented for middle-income clients (the 50th percentile bar) and low-income clients (the 20th percentile bar) In all three bars, the central tendency (as measured by the median) is closer to the low end of the range



How do these incomes compare with those of other Ecuadorans, especially those considered to be truly poor? Ecuador has an official minimum wage which many regard as a threshold of poverty In Figure 1, the horizontal line represents the income level of a **household** earning the official minimum wage, assuming that 35% of households have two wage earners (as

was found in the survey of CEMOPLAF clients) Clients at the 20th percentile of the income distribution in each clinic fall below this line, while most clients at the 50th percentile (and all clients at the 80th percentile) are above the line

Although incomes vary considerably within and across clinics, clients all are subject to the same prices Table 3 presents information on the fees charged for selected CEMOPLAF services IUD insertions are priced higher than other services, primarily because the price of the IUD itself (approximately $1) is included in the total price The table also shows that average prices of non-family planning services exceed those of family planning services, while prices of a year of IUD use and a course of gynecology treatment are roughly equivalent

TABLE 3
MEDIAN PRICE CHARGED IN CEMOPLAF CLINICS, BY TYPE OF SERVICE

MEDIAN PRICE (in US$)					
IUD INSERTION	GYN VISIT INCL LABS	AVG FP SERVICE (NOT INCLUDING CONTRACEPTIVES)	AVG NON-FP SERVICE	FIRST YEAR OF IUD USE	COURSE OF GYN TREATMENT
3 95	2 61	1 43	1 81	5 93	5 98

How do these prices compare to charges for similar services in the private sector? According to the results of a small telephone survey of private providers conducted in July 1994 in Quito, private sector prices for IUD insertions and gynecology visits ranged from $10 to $25 (Ayabaca, 1994) Even though these prices define an upper extreme of the price range nationwide (because they reflect market conditions in the capital city), significant margins clearly exist between average private-sector prices and median CEMOPLAF prices

Official CEMOPLAF policy requires that all clients be served, regardless of ability to pay But are CEMOPLAF prices high in comparison to client incomes? One way to answer this

question is to compute the percentage of annual income needed to pay for services Table 4 presents this data for the two highest-volume services, IUDs and gynecology, affordability estimates are presented for three different levels of client income

TABLE 4
PRICE OF ONE YEAR OF IUD USE OR A COURSE OF GYNECOLOGY SERVICES, EXPRESSED AS A PERCENTAGE OF INCOME, BY INCOME LEVEL

WHEN INCOME IN EACH RANGE IS	PRICE AS PERCENTAGE OF ANNUAL INCOME		
	At 80TH Percentile	At 50TH Percentile	At 20TH Percentile
MEDIAN	0 2	0 4	0 7
MAXIMUM	0 1	0 2	0 4
MINIMUM	0 4	0 7	1 2

Each column represents the percentage of annual income needed to purchase one year of IUD services (including insertion and follow-up visits), or a course of gynecology treatment (including diagnosis and cure) We found that CEMOPLAF services consume less than one percent of annual household income, except for in a few clinics where clients at the 20th percentile of the income distribution would pay slightly more than one percent of their annual household income for these services

Clinic Profiles of Ability to Pay A final question is how client ability to pay varies across the 20 CEMOPLAF clinics The cluster analysis procedure placed clinics into groups depending on how similar the clinics were to one another in terms of the four variables included in the model We used the agglomerative method for forming clusters, which starts with each clinic in its own cluster, and then groups clinics into larger and larger clusters until all clinics are in the same cluster The results of the four-cluster solution is presented below

FOUR-CLUSTER SOLUTION			
High SES	**Med-High SES**	**Med-Low SES**	**Low SES**
Quito 14	Quito 1 Santo Domingo Quevedo Guayaquil Esmeraldas Quiminde Guaranda Salcedo Quito 21 Quito COP	Quito 2 Ibarra Riobamba Latacunga Otavalo	Tulcan Ventanas Cajabamba

One clinic, Quito 14, is the only member of its cluster This clinic has the highest median family income, the highest percentage of clients that work for wages, the highest percentage of households with a refrigerator, and a relatively high percentage of clients that had consumed meat two of the previous three days At the other extreme are the three clinics in Tulcan, Ventanas and Cajabamba, which are at or near the bottom of the distribution for all four variables The medium-high SES group contains three clinics in Quito, one in Guayaquil, and several located in smaller cities on major routes linking Quito with the port of Esmeraldas and with Guayaquil itself The clinics in the medium-low group include one facility in a poor section of Quito, and four clinics located in highland cities near large concentrations of indigenous persons

As shown below, the only difference between the four-cluster and the three cluster solutions is that the middle two groups merge to form one large cluster Other models using different combinations of variables also were tested, but the results did not vary much A few clinics switched positions in the four-cluster solution, but the clinics in the low and high SES groups remained constant

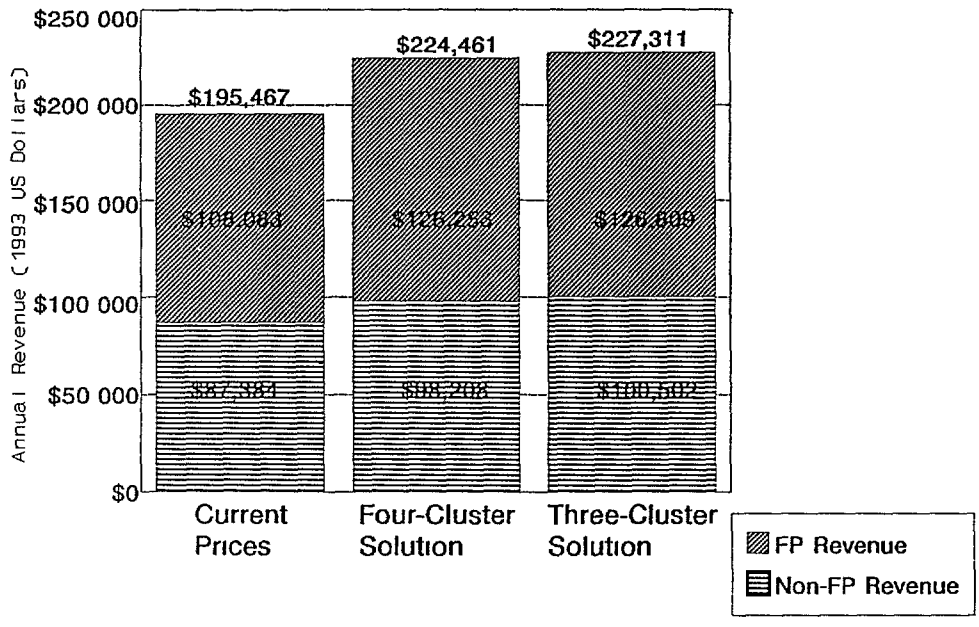
THREE-CLUSTER SOLUTION		
High SES	Medium SES	Low SES
Quito 14	Quito 1 Quito 2 Santo Domingo Quevedo Guayaquil Esmeraldas Quiminde Ibarra Latacunga Riobamba Guaranda Salcedo Otavalo Quito 21 Quito COP	Tulcan Ventanas Cajabamba

The results of the cluster analysis suggest that client economic status does vary substantially across clinics But the results also show that several clinics serve a clientele which is fairly homogenous in economic terms For example, in the three-cluster solution, sixteen clinics comprise a single cluster However, pricing of services within this cluster is not uniform, average prices for family planning services range from $1 21 to $2 00 and average prices for non-family planning services range from $1 50 to $2 33 Ironically, the Ventanas clinic, one of the members of the lowest-SES cluster, charges the highest average price for non-family planning services

An interesting question with potentially important sustainability implications is whether all the clinics in each cluster could charge the prices of the highest-priced clinic within the cluster If client ability to pay is similar within a cluster, one would not expect to see sharp reductions in demand if clinics charging lower prices were to bring their fees in line with the clinics charging higher prices

Figure 2 illustrates the likely impact if CEMOPLAF were to implement such a pricing policy The first set of bars shows revenues earned from family planning and non-family planning under the current pricing structure, in which each clinic charges its own price The second set of bars shows the income that could be earned if the clinics were grouped according to the four-cluster solution, and all clinics within each cluster charged the same fees as the highest-price clinic within the cluster Annual revenues rise from $195,467 to $224,461, an increase of 14 8% The third set of bars gives the same information for the three-cluster solution, in this case, revenue increases 16 2% over the baseline amount

Figure 2
Changes in Annual Revenues if all Clinics Within a Cluster Adopted the Fees of the Highest-Priced Clinic Within the Cluster



IV DISCUSSION

As donors reduce funding for family planning NGOs in some countries, program managers may have to consider increasing fees But in many programs, increased cost recovery is seen as incompatible with a more basic social goal of serving the poor, efforts to institute or increase fees are likely to face determined opposition from within the program itself The primary purpose of this study was to evaluate the economic status of CEMOPLAF clients, so that program managers would have a better idea of client "ability to pay", before CEMOPLAF intensified its efforts to increase fee revenue An important conclusion of the study is that many clients appear to be economically better off (as measured by expenditure patterns and reported income) than the very poor women CEMOPLAF explicitly targets This finding may be related to Ecuador's deteriorating economic situation and high inflation As real incomes continue to decline, formerly middle-class women may be shifting their health care purchases away from private sectors providers, and toward high-quality, low-priced programs like CEMOPLAF Meanwhile, the truly destitute women (those who cannot afford to pay anything for services) may be switching to public-sector providers or quitting contraception altogether

The study used self-reported income as an indicator of economic status, and it should be noted that such data are not particularly reliable for measuring the economic well-being of households The problems with using self-reported income, summarized in Levine, et al (1992) include the following (1) non-monetary income (barter, in-kind) is difficult to measure and may comprise a large share of total income, especially in poor households, (2) individuals will understate their incomes if they perceive a benefit in doing so, and (3) because there is no

generally agreed-upon definition of income, measures are highly sensitive to the definition employed (Levine, et al , 1992)

These issues likely have affected the reliability of our estimates of household income For example, the survey asked about client and partner **employment** income only, and therefore may have underestimated actual household income Likewise, some respondents may have recognized that the survey's true objective was to measure economic status (and not health habits), and intentionally understated their incomes However, both of these problems would tend to bias incomes in a downward direction, leading to the conclusion that the income estimates probably define a **lower bound** of true economic status of clients

A key finding is that CEMOPLAF prices are affordable even to clients at low income levels, consuming less than one percent of annual income in most cases To put this into perspective, surveys of household expenditure for health services in developing countries show that most families spend 2-5% of their annual income on medical care and drugs (Griffin, 1988), the most recent figure for Ecuador is 5% (World Bank, 1993) Payments by clients for a year of IUD use or a course of gynecology treatment would therefore consume less than one-fifth of the typical annual household expenditure on health

Although the results of this study suggest that some CEMOPLAF clients could afford to pay more than they do under current pricing structure, it does not provide any practical guidance to help CEMOPLAF identify which clients can afford to pay and which cannot Additional research is needed to develop reliable proxy measures for ability to pay, so that poor clients can be protected from the effects of blanket price increases

REFERENCES

The International Bank for Reconstruction and Development World Development Report, 1993 New York Oxford University Press, 1993

Griffin, Charles C User Charges for Health Care in Principal and Practice Washington DC The World Bank, 1988

Levine, Ruth E , Charles C Griffin and Timothy Brown Means Testing in Cost Recovery A Review of Concepts and Experience Unpublished Draft Manuscript, January 31, 1992

Pinto, Ernesto Personal Communication regarding Prices of Basic Foods, October 10, 1994

Ayabaca, Margarita Personal Communication regarding Prices Charged by Private Sector Providers, June 3, 1994

de Vargas, Teresa Personal Communication regarding Costs of Private School Tuition, June 3, 1994

APPENDIX 1

Final Report

Improving Financial Sustainability through Income Generation An Approach for Estimating Profitability of Ultrasound in an Ecuadoran Family Planning Agency

Improving Financial Sustainability through Income Generation: an Approach for Estimating Profitability of Ultrasound in an Ecuadoran Family Planning Agency

Final Report

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November 11, 1994

Introduction

A Background

During the past 30 years, non-governmental organizations (NGOs) have played a major role in providing family planning services in much of Latin America As shown in Table 1, NGOs are an important source of contraception in many countries in the region

TABLE 1 Percentage of Current Users of Family Planning who Obtain Services from an NGO, by Country

Country	Year of Survey	Percent Obtaining Services from NGO
Colombia	1990	32 1
Dominican Republic	1991	11 6
Ecuador	1989	15 1
El Salvador	1988	12 6
Guatemala	1987	24 8
Honduras	1991	24 2
Paraguay	1990	9 6
Peru	1992	6 0

Source Demographic and Health Surveys, various years

Donors have supported NGOs with contributions of equipment, cash, contraceptive commodities and technical assistance But recent trends in donor assistance show that resource flows to Latin America are declining in real terms, while support is increasing for sub-Saharan Africa, the Middle East and parts of Asia, where rates of population growth are higher Moreover, NGOs are receiving a smaller share of donor funds targeted to Latin America (UNFPA, 1993) Consequently, financial sustainability is a major preoccupation of family planning NGOs in Latin America

Income generation is one approach to increasing financial sustainability of NGOs Income generation can take on many forms, including soliciting funds from new donors, increasing prices of existing services, and establishing entirely new services and products Several NGOs in Latin America (most notably Profamilia in Colombia) have attempted to increase income through a strategy known as "diversification", in which the NGO seeks to produce related

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services at a profit (Castro V et al, 1991) Examples of diversification include setting up laboratories and on-site pharmacies, or offering reproductive health services such as colposcopy or diagnostic laparoscopy

Before establishing diversified services, programs should carefully assess the potential market, and should estimate the costs and potential income associated with any new service Without such information, large investments in staff training and equipment can be wasted on services that fail to produce profits This paper reports on a study that was carried out to help managers of CEMOPLAF, an Ecuadoran family planning NGO, decide whether to establish ultrasound services

B Program Setting

The Centros Medicos de Orientacion y Planificacion Familiar (CEMOPLAF), based in Quito, Ecuador, has defined as its mission to provide quality reproductive health services to low-income women CEMOPLAF's service outlets include 19 clinics, a community-based distribution (CBD) program, a network of nearly 700 associated medical professionals, and a growing voluntary surgical contraception (VSC) program

One of CEMOPLAF's objectives for the future is to achieve financial self-sufficiency USAID/Ecuador has in the past provided funding for CEMOPLAF's central administration and for operating expenses of some of its clinics But USAID is gradually phasing out assistance to CEMOPLAF, and after 1997 will provide only limited commodity support and technical assistance

In response to anticipated reductions in USAID support, CEMOPLAF produced a sustainability strategy which focuses on increasing institutional income through several different mechanisms One of the agency's first steps was to establish an ultrasound service in its pilot clinic in Quito in 1992 This service has been highly successful, and CEMOPLAF managers wanted to introduce ultrasound services in other locations The agency was prepared to purchase ultrasound machines for up to 10 clinics, however, CEMOPLAF managers wanted to offer ultrasound only in those locations where the service could produce profits, which would be used to subsidize family planning clients

Objectives

The overall objective of the study was to determine which CEMOPLAF clinics could profitably produce ultrasound services Specific objectives included the following

(1) to assess the suitability of each clinic as a possible site for ultrasound services, including adequacy of physical infrastructure and staff capabilities,

(2) to estimate the potential demand for ultrasound services in the first year, in each clinic,

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(3) to project income from ultrasound services in each clinic during the first five years of operation,

(4) to estimate costs of providing ultrasound services in each clinic during the first five years of operation,

(5) to determine break-even points and estimate total profits in the clinics which were determined to be the best candidates for providing ultrasound services

Methodology

1 Assessment of clinic suitability

A questionnaire was designed and interviews conducted with directors of the 19 clinics which comprise CEMOPLAF's clinical delivery system Directors first were asked whether or not they wanted to offer ultrasound services in their center The questionnaire then elicited information in the following three areas (1) investments in staff and clinic infrastructure needed to equip the clinic to offer ultrasound services, (2) current demand for ultrasound services within the clinic, and (3) prices charged by competing providers of ultrasound services in the same geographic area as the CEMOPLAF clinic

The responses of clinic directors were used to classify the 19 clinics into two categories, according to the suitability of their staff and infrastructure Centers were classified as "high" if sufficient physical space was available for the ultrasound machine and if the director knew of a trained specialist in the area who could perform ultrasound procedures on a contract basis The rationale for contracting a specialist rather than using CEMOPLAF personnel was that high financial and time costs of ultrasound training was unacceptable to CEMOPLAF management Centers were classified as "low" if they lacked either the available space for the machine or the trained specialist

2 Estimation of demand

Not surprisingly, information on extant demand for services such as ultrasound does not exist in Ecuador As a proxy measure of likely demand, we assumed that the rate of ultrasound procedures per hundred gynecology and prenatal visits in the existing ultrasound service could be extrapolated to other potential ultrasound sites The total number of ultrasound procedures in the existing service is the sum of referrals from CEMOPLAF clinics and associated physicians, referrals from other institutions or medical professionals outside of the CEMOPLAF system, and walk-in clients If other clinics in Quito were to establish ultrasound services, referrals to the existing service from other CEMOPLAF sources would be reduced Therefore, to calculate the rate we separated out those referrals from other CEMOPLAF clinics and associated physicians

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The rate was then multiplied by the number of prenatal and gynecology visits in other clinics (taken from CEMOPLAF service statistics) to yield estimates of potential demand in the first year Five-year demand projections were then made under two assumptions of future demand growth a low-growth scenario based on the projected increase in the population of Ecuadoran women of reproductive age, and a high-growth scenario which reflects rates of growth of CEMOPLAF gynecology and prenatal services

3 Income and Costs

Income was estimated by multiplying the projected number of procedures by the average price charged by competing providers in each center's geographic area Costs of establishing ultrasound services in each clinic were estimated by summing the costs of supplies, contract wages paid to ultrasound operators, improvements to clinic infrastructure, additional secretarial staff, promotion, and depreciation of ultrasound machines and related equipment Annual profits or losses were calculated by subtracting costs from income Break-even points were determined by establishing the length of time and the number of ultrasound procedures needed for each clinic to cover fixed costs of operation

Results

1 Suitability of Current Staff and Infrastructure

Three of the 19 clinics were excluded from the survey of clinic directors, two because of their low client loads, and one because it already offers ultrasound All 16 of the clinic directors who were interviewed indicated an interest in offering ultrasound services in their clinics However, as shown in Table 2, only four of the 16 centers had the staff and infrastructure needed to merit a rating of "high suitability" for establishing ultrasound services

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TABLE 2 Staff and Infrastructure Capabilities for Offering Ultrasound

CENTER AND NO	SUFFICIENT PHYSICAL SPACE	LOCAL SPECIALIST	SUITABILITY RATING
QUITO 2	1	0	MEDIUM
STO DOMINGO 3	0	1	LOW
QUEVEDO 4	1	0	LOW
GUAYAQUIL 5	2	1	HIGH
ESMERALDAS 6	2	1	HIGH
QUININDE 7	2	0	LOW
IBARRA 8	2	1	HIGH
TULCAN 9	0	1	LOW
RIOBAMBA 10	2	1	HIGH
LATACUNGA 11	1	0	LOW
VENTANAS 12	2	0	LOW
GUARANDA 13	1	0	LOW
QUITO 14	0	1	LOW
OTAVALO 16	1	0	LOW
STO DOMINGO 18	2	1	HIGH
QUITO 21	2	0	MEDIUM
QUITO COP 22	1	0	MEDIUM
	2=9m^2 or more 1=4m^2 to 9m^2 0=no space	1=knows spec 0=does not know spec	

Source Survey of CEMOPLAF Clinic Directors

Three clinics initially received a rating of "low", because their directors did not know an ultrasound specialist We subsequently reclassified them as "medium" because all three clinics are situated in Quito, where it was assumed that ultrasound specialists could be found

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2 Demand for Ultrasound Services

In its first year of operation, CEMOPLAF's existing ultrasound service performed a total of 2,865 procedures Approximately two-thirds (1,858) were referrals generated within the clinic or from other non-CEMOPLAF sources, while one-third of these were referrals from other CEMOPLAF clinics or associated physicians In the same year, gynecology and prenatal clients made a total of 10,035 office visits to the CEMOPLAF clinic where the ultrasound service is located Table 3 shows how these data were used to calculate a factor to project demand for ultrasounds in other CEMOPLAF clinics

TABLE 3 Derivation of Factor to Estimate Baseline Demand

TYPE OF REFERRAL	NO OF EXAMS		NO OF EXAMS AS % OF TOTAL ANNUAL GYNECOLOGY AND OBSTETRIC VISITS (10,035)
REFERRALS WITHIN CLINIC		502	05
REFERRALS FROM OUTSIDE			
PRIVATE PHYSICIANS	679		
PUBLIC SECTOR (MOH, IESS)	192		
UNKNOWN SOURCE	183		
TOTAL OUTSIDE REFERRALS		1054	11
SELF-REFERRAL (WALK-IN CLIENTS)		302	03
TOTAL		1858	19

Source CEMOPLAF Service Statistics

Private physicians produced the largest number of referrals to the existing ultrasound services, followed by CEMOPLAF physicians from the adjoining clinic, and walk-in clients Taking these referrals as a percentage of prenatal and gynecology visits in the center, a total of 19 ultrasounds were performed for every 100 prenatal and gynecology visits This factor is used in Table 4 to estimate demand for ultrasounds in other CEMOPLAF clinics

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TABLE 4 Annual Prenatal and Gynecology Visits (1993) and Estimated Number of Ultrasounds in First Year, by Clinic

CENTER AND NO	PRENATAL VISITS A	GYNECOLOGIST VISITS B	ESTIMATED ULTRASOUNDS (A+B) x 19
ESMERALDAS 6	1,940	5,799	1,470
QUITO 2	826	5,250	1,154
STO DOMINGO 3	1,740	4,204	1,129
QUITO 21	727	4,980	1,084
LATACUNGA 11	1,139	4,087	993
QUEVEDO 4	633	3,914	864
STO DOMINGO 18	907	1,609	478
TULCAN 9	494	1,471	373
IBARRA 8	754	1,081	349
RIOBAMBA 10	1,526	237	335
GUARANDA 13	287	1,440	328
QUITO 14	804	859	316
QUITO COP 22	1,564	76	312
VENTANAS 12	333	1,276	306
QUININDE 7	347	619	184
OTAVALO 16	483	193	128

If the demand estimates for the two Santo Domingo clinics are combined (CEMOPLAF managers indicated they would not put two ultrasounds in such close proximity) then the clinics fall out into two groups six in which we projected 1000 or more ultrasounds per year, and ten with 400 or fewer per year The following six clinics therefore emerge as the top candidates for ultrasound services Esmeraldas, Quito 2, Santo Domingo 3/18, Quito 21, Latacunga and Quevedo Combining these results with the findings of the analysis of clinic capabilities (Table 2), the first four of these clinics would appear to be the most suitable sites for offering ultrasound

3 Estimated Income from Ultrasound Services

The survey of clinic directors revealed substantial variation in prices charged by competing ultrasound providers in CEMOPLAF catchment areas Average market prices ranged from a low of $6 82 in six of the centers, to a high of $15 91 in Ibarra The range of prices in the group of six "semifinalist" clinics was narrower, from $6 82 to $9 09 Estimated income from ultrasound services for these clinics is presented in table 5 We have included CEMOPLAF's existing ultrasound (Quito 1) in the income projections, but have reduced the number of estimated ultrasounds in that facility to reflect lower expected referral rates from other Quito clinics

TABLE 5 Estimated revenue from ultrasound services in first year of operation, for the seven "high-demand" clinics

CENTER AND NO	EST NO OF ULTRASOUNDS	PRICE PER ULTRASOUND	EST YEAR 1 INCOME (US$)
QUITO 1	2,400	11 36	27,273
STO DOM 3/18	1,600	9 09	14,545
ESMERALDAS 6	1,500	9 09	13,636
QUITO 2	1,200	6 82	8,182
QUITO 21	1,100	6 82	7,500
LATACUNGA 11	1,000	6 82	6,818
QUEVEDO 4	900	9 09	8,182
TOTAL	10,200		86,136

Table 5 shows that CEMOPLAF's existing ultrasound service would earn the most income in the first year, even with a substantial reduction in referrals from other Quito clinics Income projections at Santo Domingo and Esmeraldas are lower, because of lower market prices and fewer projected clients

4 Costs of Establishing Ultrasound Services

Table 6 presents estimates of costs to CEMOPLAF of providing ultrasounds in the seven clinics Variable costs will be higher in clinics where demand is projected to be higher, because by definition, variable costs increase as output increases Annualized fixed costs are higher in the pilot clinic (Quito 1) because physicians who perform ultrasounds receive a salary in addition to the per-procedure payment Variations in start-up costs reflect local differences in the cost of advertising and the extent of clinic remodeling work required

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TABLE 6 Estimated costs of ultrasound services in first year of operation, for the seven "high-demand" clinics

CENTER AND NO	TOTAL VARIABLE COSTS	ANNUAL FIXED COSTS	START-UP COSTS	TOTAL COSTS
QUITO 1	8,950	10,928	2,273	22,151
STO DOM 3/18	4,876	7,119	2,091	14,086
ESMERALDAS 6	4,571	7,119	2,091	13,781
QUITO 2	2,839	7,119	2,818	12,776
QUITO 21	2,602	7,119	2,609	12,330
LATACUNGA 11	2,365	7,119	352	9,836
QUEVEDO 4	2,743	7,119	315	10,177
TOTAL	28,946	53,642	12,549	95,137

5 Profitability and Break-even Analysis

Table 7 presents estimates of profits or losses from ultrasound services in the seven clinics, assuming annual increases in demand of 10 percent per year This rate of increase roughly parallels the 11 percent growth rate in gynecology and pre-natal visits observed over the past four years (CEMOPLAF service statistics, 1990-1993) Since costs are fairly stable across clinics (except for Quito 1), profits and time to break even are mainly functions of income growth, which depends in turn on estimated demand Only two of the clinics break even in the first year (as evidenced by positive net income), however, by the fifth year, all clinics except Latacunga are profitable But when the analysis focuses on cumulative five-year profits (see the final column of Table 7), only Quito 1, Santo Domingo and Esmeraldas earn enough income to more than cover costs

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TABLE 7 Annual and Total Profits or Losses for the seven "high-demand" clinics (high-growth projection)

CENTER/NO		YEAR1	YEAR2	YEAR3	YEAR4	YEAR5	TOTAL
QUITO	1	5,116	9,220	11,235	13,452	15,890	54,913
STO DOM	3/18	459	3,517	4,580	5,750	7,037	21,343
ESMERALDAS	6	-146	2,852	3,849	4,946	6,152	17,653
QUEVEDO	4	-1,996	-1,137	-538	120	844	-2,707
QUITO	2	-4,592	-1,240	-652	-5	706	-5,783
QUITO	21	-4,829	-1,730	-1,191	-598	54	-8,293
LATACUNGA	11	-3,017	-2,220	-1,730	-1,191	-598	-8,755
TOTAL		-9,005	9,262	15,553	22,474	30,085	68,371

Table 8 gives a more conservative picture of potential income from ultrasound services These estimates assume an annual growth rate of 3 percent, consistent with projected increases in the cohort of Ecuadoran women aged 15-49 (United Nations, 1991) Although the first-year profits are the same as in table 7, profits in subsequent years are much lower total profits from all clinics over five years decline from $68,371 to $22,852 If we compare only the three profitable clinics (assuming that CEMOPLAF would not put machines in clinics that could not produce profits), the total five-year profit drops from $93,909 to $64,419

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TABLE 8 Annual and Total Profits or Losses for the Seven "high-demand" clinics (low-growth projection)

CENTER/NO		YEAR1	YEAR2	YEAR3	YEAR4	YEAR5	TOTAL
QUITO	1	5,116	7,938	8,504	9,087	9,688	40,334
STO DOM	3/18	459	2,840	3,139	3,446	3,763	13,647
ESMERALDAS	6	-146	2,217	2,497	2,786	3,083	10,438
QUEVEDO	4	-1,996	-1,517	-1,349	-1,176	-998	-7,036
QUITO	2	-4,592	-1,614	-1,449	-1,279	-1,103	-10,037
QUITO	21	-4,829	-2,073	-1,921	-1,765	-1,605	-12,193
LATACUNGA	11	-3,017	-2,531	-2,394	-2,252	-2,106	-12,300
TOTAL		-9,004	5,260	7,027	8,847	10,722	22,852

Discussion

The results of this study provide clear guidance to CEMOPLAF managers on where the institution could profitably operate ultrasound services We have produced two scenarios that estimate five-year profits of between $65,000 and $94,000, by continuing with the existing ultrasound service at Clinic 1 in Quito, and by adding ultrasound machines in Santo Domingo and Esmeraldas

When we presented these results to CEMOPLAF management, they requested additional analyses based on two possible modifications First, they questioned whether placing the existing (partially depreciated) ultrasound machine in one of the unprofitable clinics might reduce fixed costs enough to allow the clinic to turn a profit Clinic 21 in Quito was selected over Clinic 2, mainly because it would divert fewer referrals from the pilot clinic Second, CEMOPLAF managers wanted to analyze the impact on profitability if Quito 1 received a more costly ultrasound machine with additional diagnostic capabilities

Table 9 presents information on changes in profitability if these two modifications were made The top half of the table repeats data from Table 8, and compares them to profits earned under the new assumptions Higher fixed costs associated with the costlier machine would lower profits substantially in Quito 1, but this reduction would be partially offset by increased income from services in Quito 21 However, the need to replace Quito 21's fully depreciated machine in year four causes the clinic to incur losses in the final two years of the projection Overall profits from the four ultrasound services are approximately 20 percent lower under the new assumptions Profits in Quito 1 may be understated, though, because demand estimates

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have not been increased to reflect additional procedures that could be done with a more sophisticated ultrasound machine

TABLE 9 Changes in Profits in Clinics 1 and 21 (Low-growth Scenario), and in the Four Clinics Receiving Ultrasounds, by Type of Projection

CENTER/NO	YEAR1	YEAR2	YEAR3	YEAR4	YEAR5	TOTAL
	ORIGINAL PROJECTION					
QUITO 1	5,116	7,938	8,504	9,087	9,688	40,334
QUITO 21	-4,829	-2,073	-1,921	-1,765	-1,605	-12,193
4 CLINICS RECEIVING ULTRASOUNDS						52,225
	MODIFIED PROJECTION					
QUITO 1	716	3,538	4,104	4,687	5,288	18,334
QUITO 21	-926	1,830	1,982	-1,765	-1,605	-484
4 CLINICS RECEIVING ULTRASOUNDS						41,935

Given that the purpose of establishing ultrasounds is to improve CEMOPLAF's financial sustainability, what would the impact be on CEMOPLAF's overall level of cost recovery? In 1993, CEMOPLAF's total income from all sources was approximately $603,100 Total expenditures were $854,750, giving a cost recovery ratio of 70 5% Our conservative projection of total profits from ultrasound services over 5 years is approximately $65,000, or $13,000 per year Adding $13,000 to the income figure for 1993, would increase the cost recovery ratio to 72 1%, or an increase of 1 6 percentage points If the profit estimate from the high-growth scenario is used, annual profits increase from $13,000 to $18,000, which would increase CEMOPLAF's cost recovery ratio by 2 1 percentage points

Several other conclusions can be drawn from this study First, it should be noted that prior to the study, CEMOPLAF managers had been prepared to purchase up to 10 ultrasound machines The decision on where to place these machines would have been extremely

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difficult, given that all 19 clinic directors had expressed interest in establishing ultrasound services in their facilities In many programs, the overall objective of establishing a service like ultrasound would not have been made explicit, and the decision on where to situate machines likely would have been based on internal agency politics

In this case, though, CEMOPLAF managers had stated unequivocally that the key objective of ultrasound services was to generate profits The results of this study provided CEMOPLAF with clear guidance on how many machines to purchase, and where to put them Therefore, by explicitly stating their objectives at the outset, and then carrying out a formal, well-documented research project to evaluate alternatives, CEMOPLAF managers ensured that internal politics would not play a role in deciding where to offer ultrasound services

More generally, the results of this study point out the limits of any single intervention to increase financial sustainability Although annual profits from CEMOPLAF ultrasound services would not be insignificant in financial terms, it is obvious that adding this service alone will not solve CEMOPLAF's sustainability problem CEMOPLAF managers are well aware of the need to pursue simultaneously several complimentary approaches to financial sustainability, including cost containment, cost recovery and income generation As the agency continues to make progress in each of these areas, the cumulative impact on financial sustainability should be substantial

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REFERENCES

Global Population Assistance Report 1982-1991 UNFPA, 1993

United Nations World Population Prospects 1990 United Nations Department of Economic and Social Affairs, 1991

Castro V , Rodrigo, et al "La Diversificacion es la Alternativa Financiera de la Planificacion Familiar" PROFAMILIA Vol 7 No 18, December, 1991

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APPENDIX 2

Final Report

An Assessment of Client "Ability to Pay" for Reproductive Health Services Provided by an Ecuadoran Family Planning Agency

An Assessment of Client "Ability to Pay" for Reproductive Health Services Provided by an Ecuadoran Family Planning Agency

Final Report

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February 1, 1995

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INTRODUCTION

The Centros Medicos de Orientacion y Planificacion Familiar (CEMOPLAF), an Ecuadoran Non-Governmental Organization (NGO), finances its programs through a combination of donated resources and fees collected from clients In 1993, revenue from client fees covered 72% of CEMOPLAF's direct program expenditures, donors paid for the remainder of direct program expenditures, and also paid for CEMOPLAF's indirect and administrative costs

Funding from the U S Agency for International Development (USAID) - CEMOPLAF's major donor - is expected to decline in coming years CEMOPLAF managers hope to offset reductions in USAID support by gradually increasing prices for existing services, and by establishing new profit-generating services such as ultrasound and colposcopy But for this strategy to succeed, clients must be able to pay for the wide range of family planning and related health services

Before embarking on an ambitious effort to generate income, CEMOPLAF managers need information on the economic status of current CEMOPLAF clients An issue of special concern is the potential impact of price increases on the poorest of CEMOPLAF clients, some within the agency fear that pursuit of sustainability is incompatible with CEMOPLAF's stated mission of providing family planning services to poor women The results of this study should help to predict whether clients will in fact be able to pay higher fees, both for family planning services and for other profit-generating services

OBJECTIVES

1 To assess the economic status of women making visits to CEMOPLAF clinics,

2 To evaluate the affordability of current CEMOPLAF prices relative to client incomes

3 To determine whether clients' ability to pay for services varies across the 20 clinics operated by CEMOPLAF

METHODOLOGY

1 Survey of Economic Status of CEMOPLAF clients

Three basic approaches can be used to measure the economic status of individuals One alternative is to focus on income, which seeks to differentiate individuals based on their purchasing power A second approach uses information on client ownership of certain durable goods (housing, vehicles, appliances, etc) to develop proxy measures of wealth A third alternative utilizes data on consumption patterns to estimate the expenditures made by households

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A questionnaire was developed and administered to a convenience sample of clients in all CEMOPLAF clinics during the months of March and April, 1994 The sampling scheme was non-probabilistic every client coming to the clinic was interviewed until 400 cases had been collected per clinic Interviewing was completed in a matter of days in clinics with high client volume, while some of the smaller clinics needed more than a month to accumulate 400 cases A

The questionnaire incorporated elements of all three approaches to assessing economic status Clients were asked direct questions about family income, about ownership of certain durable goods, and about consumption of specific goods and services which in the Ecuadoran context would indicate that the household had discretionary income exceeding a level needed to cover basic necessities For example, a series of questions focused on household consumption of goods or services such as cigarettes, meat, beautician services, private education for children, and private-sector health care The questionnaire also asked about education, number of living children, tenant or homeowner status, and motive for visiting the clinic

Within CEMOPLAF's overall pricing scheme, the role of non-family planning services is to produce income to subsidize family planning services for women who cannot afford to pay CEMOPLAF management believes that the socio-economic level of non-family planning clients is somewhat higher than that of family planning clients We used the Pearson Chi-square test of association to test for differences between the two client groups in terms of their "ability to pay"

2 Affordability of CEMOPLAF services

Affordability refers to the relationship between the price of a good or service and the resources available to the person purchasing it Each clinic provided a current list of prices for all services and products offered This information was used to calculate average prices for family planning and non-family planning services We also calculated the price of a year of IUD use (including follow-up visits) and the price of a typical course of gynecological treatment (including laboratory tests)

Affordability of CEMOPLAF prices was assessed by dividing these index prices by annual client household income Affordability varies within clinics because clients at different income levels all pay the same prices To capture some of this variation, we compared price/income ratios for clients at the 20th percentile, the median, and the 80th percentile of the income distribution in each clinic

3 Variation in "Ability to Pay" Across Clinics

Organizations like CEMOPLAF, which depend heavily on fee revenue, must pay close attention to pricing Ideally, prices in each clinic should be set in relation to the economic potential of the clientele We used data from the client survey to create a summary profile of economic status for each clinic Variables with several categories were transformed into

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simple indicators portraying the situation in each clinic as a whole For example, the seven categories of educational attainment were collapsed into a single measure of the percentage of clients who had completed secondary school or higher The final product of this effort was a clinic profile database, which included 17 variables for each of the 20 clinics

To determine which clinics were similar in terms of client economic status, a hierarchical cluster analysis was performed using the procedure CLUSTER in SPSS The four variables selected for the model included the percentage of clients who reported that they received wages for work outside the home, the percentage that owned a refrigerator, the percentage that had consumed meat at least two of the previous three days, and median family income These variables were selected because they represent the three approaches to measuring economic status outlined above income and participation in the work force indicate client purchasing power, refrigerator ownership represents assets, and meat consumption is a common household expenditure

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RESULTS

1 Characteristics of the Survey Respondents

Table 1 provides basic descriptive information about the sample of women interviewed During the survey period, slightly fewer than half of all visits were made by women seeking family planning services, while the remainder of visits were made for other purposes, including gynecology, pediatrics, obstetrical care and general medicine Median educational attainment of all clients is some secondary schooling, but nearly 35% of clients had either completed secondary school or had attended a university or technical school Almost two-thirds of respondents reported having two or fewer living children

TABLE 1
CHARACTERISTICS OF CEMOPLAF CLIENTS

CHARACTERISTIC	PERCENT (N=6601)
REASON FOR VISIT	
Family Planning	45 0
Non-Family Planning	55 0
EDUCATIONAL ATTAINMENT	
None	3 9
Some Primary	12 0
Completed Primary	24 4
Some Secondary	24 9
Completed Secondary	19 5
University or Technical	15 3
NO. OF LIVING CHILDREN	
0	12 5
1	25 8
2	26 5
3 or more	35 1

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2 Indicators of "Ability to Pay" for CEMOPLAF Services

Table 2 summarizes responses of clients regarding ownership of assets, and household consumption patterns As shown in the third column, a substantial proportion of the clientele appears to be fairly well-off in economic terms nearly four clients in ten own their homes, and 44 6% own a refrigerator Almost a third of clients with school-age children send those children to private schools, and more than 70% of clients reported having consumed meat at least two of the previous three days Finally, mean family income was somewhat more than 4 million sucres annually, which roughly equates to US$ 2,000 at average 1994 exchange rates

TABLE 2
SELECTED INDICATORS OF ECONOMIC STATUS

INDICATOR	FAMILY PLANNING (N=2970)	NON-FAMILY PLANNING (N=3631)	ALL CLIENTS (N=6601)
RESIDENCE TYPE (%) *			
Homeowner	36 8	41 0	39 1
Renter	29 9	25 0	27 3
Lives with Parents	33 3	34 0	33 7
OWNS REFRIGERATOR (%) *			
Yes	39 6	48 7	44 6
No	60 4	51 3	55 4
PRIVATE EDUCATION (%) *			
Yes	28 7	35 7	32 5
No	71 3	64 3	67 5
MEAT CONSUMPTION (%) *			
At least 2 of prev 3 days	66 9	75 9	71 9
Less than 2 of prev 3 days	33 1	24 4	28 1
MEAN FAMILY INCOME (**)			
Sucres per Year (000s)	3 960	4 572	4,296

Notes a single asterisk (*) indicates that the significance level of the Pearson Chi-square statistic was less than 0001 A double asterisk (**) indicates that the significance level of the t statistic was less than 0001

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Table 2 also reports statistically significant differences between family planning clients and non-family planning clients on all six indicators Although the direction of the differences is consistent (i e , economic status of non-family planning clients is higher on all of the indicators) the magnitude of the differences may not be as great as suggested by the level of significance In studies with large sample sizes, small differences (with no real practical implications) may turn out to be statistically significant

What would be the financial outlay associated with the patterns of consumption shown in Table 2? It is difficult to generalize about housing and refrigerators because of variation in the age and condition of both assets In the case of private education, tuition costs also can vary considerably, depending on the location and type of school As an approximation, CEMOPLAF senior staff estimated an annual cost of from $600 to $2,400, per student (de Vargas, 1994)

Regarding meat consumption, annual expenditure can be estimated using data from a recent study of food prices carried out by the Ecuadoran Ministry of Public Welfare (Pinto, 1994) The price of a single portion of meat ranges from $0 32 for fish to $0 25 for chicken Multiplying an average price of $0 29 per serving by the average family size of CEMOPLAF households (4 21 persons), and then by 66% of days of the year (240 days), the resulting annual cost would be $293 per year

A final example is client use of beautician services More than 70 percent of clients reported visiting a beauty salon at some time during the previous year The average annual expenditure was $5 17 per client Although this expenditure is inconsequential in relation to annual income, it is almost identical to the expenditure ($5 93) that a client would need to make to receive an IUD and follow-up care for one year at CEMOPLAF

2 Affordability of CEMOPLAF Services

The purpose of this section is to examine the relationship between CEMOPLAF prices and client incomes CEMOPLAF's stated mission is to serve the poor, and a prevalent belief of many in is that most clients are low-income women Figure 1 summarizes information collected on client household income Each bar represents the range of incomes across clinics at a specified point in the income distribution For example, the first bar shows that for the relatively wealthy clients in each clinic (those at the 80th percentile), annual household incomes range from a low of $1,636 to a high of $4,364 The same information is presented for middle-income clients (the 50th percentile bar) and low-income clients (the 20th percentile bar) In all three bars, the central tendency (as measured by the median) is closer to the low end of the range

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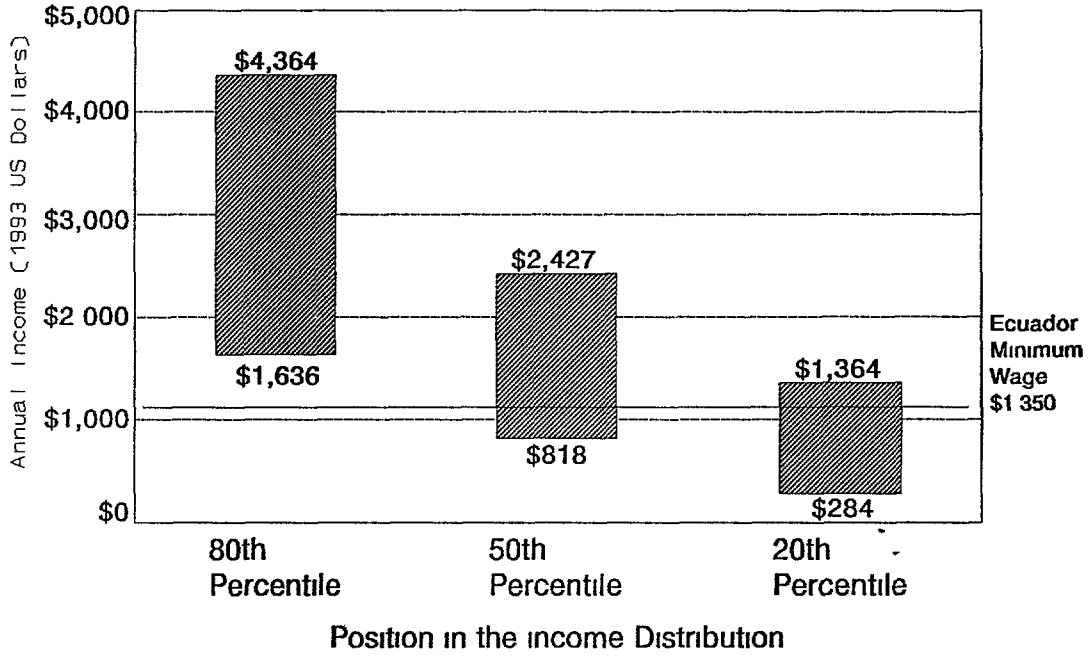
Figure 1
Variation Across Clinics in Annual Household Income of CEMOPLAF Clients at Selected Points in the Income Distribution



How do these incomes compare with those of other Ecuadorans, especially those considered to be truly poor? Ecuador has an official minimum wage which many regard as a threshold of poverty In Figure 1, the horizontal line represents the income level of a **household** earning the official minimum wage, assuming that 35% of households have two wage earners (as was found in the survey of CEMOPLAF clients) Clients at the 20th percentile of the income distribution in each clinic fall below this line, while most clients at the 50th percentile (and all clients at the 80th percentile) are above the line

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Although incomes vary considerably within and across clinics, clients all are subject to the same prices Table 3 presents information on the fees charged for selected CEMOPLAF services IUD insertions are priced higher than other services, primarily because the price of the IUD itself (approximately $1) is included in the total price The table also shows that average prices of non-family planning services exceed those of family planning services, while prices of a year of IUD use and a course of gynecology treatment are roughly equivalent

TABLE 3
MEDIAN PRICE CHARGED IN CEMOPLAF CLINICS, BY TYPE OF SERVICE

MEDIAN PRICE (in US$)					
IUD INSERTION	GYN VISIT INCL LABS	AVG FP SERVICE (NOT INCLUDING CONTRACEPTIVES)	AVG NON-FP SERVICE	FIRST YEAR OF IUD USE	COURSE OF GYN TREATMENT
3 95	2 61	1 43	1 81	5 93	5 98

How do these prices compare to charges for similar services in the private sector? According to the results of a small telephone survey of private providers conducted in July 1994 in Quito, private sector prices for IUD insertions and gynecology visits ranged from $10 to $25 (Ayabaca, 1994) Even though these prices define an upper extreme of the price range nationwide (because they reflect market conditions in the capital city), significant margins clearly exist between average private-sector prices and median CEMOPLAF prices

Official CEMOPLAF policy requires that all clients be served, regardless of whether they can afford to pay But are CEMOPLAF prices high in comparison to client incomes? One way to answer this question is to compute the percentage of annual income needed to pay for services Table 4 presents this information for the two highest-volume CEMOPLAF services, namely IUDs and gynecology, affordability estimates are presented for three different levels of client income

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TABLE 4 PRICE OF ONE YEAR OF IUD USE OR A COURSE OF GYNECOLOGY SERVICES, EXPRESSED AS A PERCENTAGE OF INCOME, BY INCOME LEVEL			
WHEN INCOME IN EACH RANGE IS	PRICE AS PERCENTAGE OF ANNUAL INCOME		
	At 80TH Percentile	At 50TH Percentile	At 20TH Percentile
MEDIAN	0 2	0 4	0 7
MAXIMUM	0 1	0 2	0 4
MINIMUM	0 4	0 7	1 2

Each column represents the percentage of annual income needed to purchase one year of IUD services (including insertion and follow-up visits), or a course of gynecology treatment (including diagnosis and cure) We found that CEMOPLAF services consume less than one percent of annual household income, except for in a few clinics where clients at the 20th percentile of the income distribution would pay slightly more than one percent of their annual household income for these services

3 Clinic Profiles of Ability to Pay

A final question is how client ability to pay varies across the 20 CEMOPLAF clinics The cluster analysis procedure placed clinics into groups depending on how similar the clinics were to one another in terms of the four variables included in the model We used the agglomerative method for forming clusters, which starts with each clinic in its own cluster, and then groups clinics into larger and larger clusters until all clinics are in the same cluster The results of the four-cluster solution is presented below

FOUR-CLUSTER SOLUTION			
High SES	Med-High SES	Med-Low SES	Low SES
Quito 14	Quito 1 Santo Domingo Quevedo Guayaquil Esmeraldas Quininde Guaranda Salcedo Quito 21 Quito COP	Quito 2 Ibarra Riobamba Latacunga Otavalo	Tulcan Ventanas Cajabamba

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One clinic, Quito 14, is the only member of its cluster This clinic has the highest median family income, the highest percentage of clients that work for wages, the highest percentage of households with a refrigerator, and a relatively high percentage of clients that had consumed meat two of the previous three days At the other extreme are the three clinics in Tulcan, Ventanas and Cajabamba, which are at or near the bottom of the distribution for all four variables The medium-high SES group contains three clinics in Quito, one in Guayaquil, and several located in smaller cities on major routes linking Quito with the port of Esmeraldas and with Guayaquil itself The clinics in the medium-low group include one facility in a poor section of Quito, and four clinics located in highland cities near large concentrations of indigenous persons

As shown below, the only difference between the four-cluster and the three cluster solutions is that the middle two groups merge to form one large cluster Other models using different combinations of variables also were tested, but the results did not vary much A few clinics switched positions in the four-cluster solution, but the clinics in the low and high SES groups remained constant

THREE-CLUSTER SOLUTION		
High SES	Medium SES	Low SES
Quito 14	Quito 1 Quito 2 Santo Domingo Quevedo Guayaquil Esmeraldas Quiminde Ibarra Latacunga Riobamba Guaranda Salcedo Otavalo Quito 21 Quito COP	Tulcan Ventanas Cajabamba

The results of the cluster analysis suggest that client economic status does vary substantially across clinics But the results also show that several clinics serve a clientele which is fairly homogenous in economic terms For example, in the three-cluster solution, sixteen clinics comprise a single cluster However, pricing of services within this cluster is not uniform, average prices for family planning services range from $1 21 to $2 00 and average prices for non-family planning services range from $1 50 to $2 33 Ironically, the Ventanas clinic, one of the members of the lowest-SES cluster, charges the highest average price for non-family planning services

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An interesting question with potentially important sustainability implications is whether all the clinics in each cluster could charge the prices of the highest-priced clinic within the cluster If client ability to pay is similar within a cluster, one would not expect to see sharp reductions in demand if clinics charging lower prices were to bring their fees in line with the clinics charging higher prices

Figure 2 illustrates the likely impact if CEMOPLAF were to implement such a pricing policy The first set of bars shows revenues earned from family planning and non-family planning under the current pricing structure, in which each clinic charges its own price The second set of bars shows the income that could be earned if the clinics were grouped according to the four-cluster solution, and all clinics within each cluster charged the same fees as the highest-price clinic within the cluster Annual revenues rise from $195,467 to $224,461, an increase of 14 8% The third set of bars gives the same information for the three-cluster solution, in this case, revenue increases 16 2% over the baseline amount

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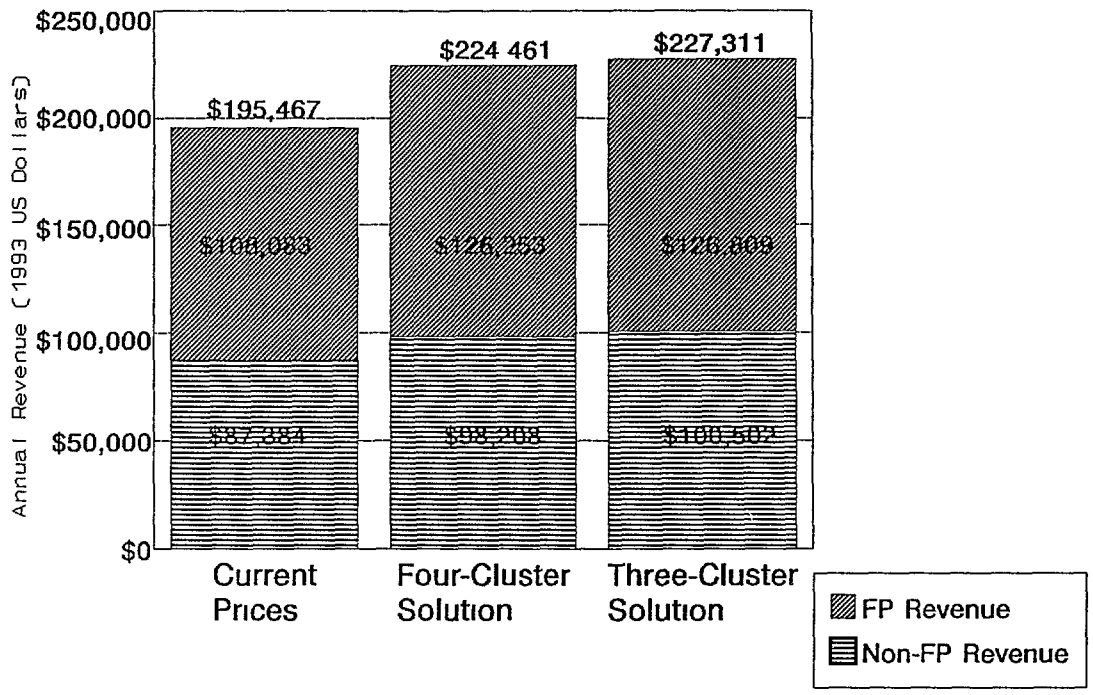
Figure 2
Changes in Annual Revenues if all Clinics Within a Cluster Adopted the Fees of the Highest-Priced Clinic Within the Cluster



DISCUSSION

As donors reduce funding for family planning NGOs in some countries, program managers may have to consider increasing fees But in many programs, increased cost recovery is seen as incompatible with a more basic social goal of serving the poor, efforts to institute or increase fees are likely to face determined opposition from within the program itself

The primary purpose of this study was to evaluate the economic status of CEMOPLAF clients, so that program managers would have a better idea of client "ability to pay", before CEMOPLAF intensified its efforts to increase fee revenue An important conclusion of the

study is that many clients appear to be economically better off (as measured by expenditure patterns and reported income) than the very poor women CEMOPLAF explicitly targets This finding may be related to Ecuador's deteriorating economic situation and high inflation As real incomes continue to decline, formerly middle-class women may be shifting their health care purchases away from private sectors providers, and toward high-quality, low-priced programs like CEMOPLAF Meanwhile, the truly destitute women (those who cannot afford to pay anything for services) may be switching to public-sector providers or quitting contraception altogether

The study used self-reported income as an indicator of economic status, and it should be noted that such data are not particularly reliable for measuring the economic well-being of households The problems with using self-reported income, summarized in Levine, et al (1992) include the following (1) non-monetary income (barter, in-kind) is difficult to measure and may comprise a large share of total income, especially in poor households, (2) individuals will understate their incomes if they perceive a benefit in doing so, and (3) because there is no generally agreed-upon definition of income, measures are highly sensitive to the definition employed (Levine, et al , 1992)

These issues likely have affected the reliability of our estimates of household income For example, the survey asked about client and partner **employment** income only, and therefore may have underestimated actual household income Likewise, some respondents may have recognized that the survey's true objective was to measure economic status (and not health habits), and intentionally understated their incomes However, both of these problems would tend to bias incomes in a downward direction, leading to the conclusion that the income estimates probably define a **lower bound** of true economic status of clients

A key finding is that CEMOPLAF prices are affordable even to clients at low income levels, consuming less than one percent of annual income in most cases To put this into perspective, surveys of household expenditure for health services in developing countries show that most families spend 2-5% of their annual income on medical care and drugs (Griffin, 1988), the most recent figure for Ecuador is 5% (World Bank, 1993) Payments by clients for a year of IUD use or a course of gynecology treatment would therefore consume less than one-fifth of the typical annual household expenditure on health

Although the results of this study suggest that some CEMOPLAF clients could afford to pay more than they do under current pricing structure, it does not provide any practical guidance to help CEMOPLAF identify which clients can afford to pay and which cannot Additional research is needed to develop reliable proxy measures for ability to pay, so that poor clients can be protected from the effects of blanket price increases

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REFERENCES

The International Bank for Reconstruction and Development World Development Report, 1993 New York Oxford University Press, 1993

Griffin, Charles C User Charges for Health Care in Principal and Practice Washington DC The World Bank, 1988

Levine, Ruth E , Charles C Griffin and Timothy Brown Means Testing in Cost Recovery A Review of Concepts and Experience Unpublished Draft Manuscript, January 31, 1992

Pinto, Ernesto Personal Communication regarding Prices of Basic Foods, October 10, 1994

Ayabaca, Margarita Personal Communication regarding Prices Charged by Private Sector Providers, June 3, 1994

de Vargas, Teresa Personal Communication regarding Costs of Private School Tuition, June 3, 1994

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APPENDIX 3

Pilot Study

ESTUDIO PILOTO DE SEGUIMIENTO CLINICO DE USUARIAS DE PLANIFICACION FAMILIAR

CENTROS. Nº 1 y Nº 21 DE CEMOPLAF

REALIZADOS POR.

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Quito, Octubre de 1994

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ESTUDIO PILOTO DE SEGUIMIENTO CLINICO DE USUARIAS DE PLANIFICACION FAMILIAR EN CENTROS DE CEMOPLAF

INTRODUCCION

Los resultados que se presentan en este informe corresponde a un estudio piloto realizado en el centro N° 1 y N° 21, de CEMOPLAF ambos ubicados en la ciudad de Quito El estudio se lo realiza con el objeto de conocer las tasas de continuacion de las usuarias de Planificacion Familiar en los servicios. en otras palabras establecer la proporcion de usuarias que despues de un periodo de uso acuden a los centros en busca de consulta de control Este estudio se hizo revisando unicamente las Historias Clinicas de las Usuarias que habian ingresado en un periodo de tiempo determinado

Los resultados de este estudio no se los debe confundir con tasas de continuacion de uso del metodo pues para establecer las tasas de continuacion de uso hay que entrevistar a las mujeres y establecer cuantas estan usando el metodo y cuantas lo han abandonado, fecha lo abandono razon de abandono, etc

METODOLOGIA

Intencionalmente se incluyen en el estudio los centros antes mencionados y dentro de cada uno de ellos se selecciono una muestra de usuarias El tipo de diseño estadistico de muestreo fue del tipo estratificafo aleatorio y sistematico el primer estrato corresponde a las usuarias de DIU el segundo a usuarias de pildora y tercero a usuarias de otros metodos

El universo de muestreo estuvo conformado por las usuarias que ingresaron al programa de Planificacion Familiar en los dos centros entre Enero de 1989 y Diciembre de 1993 La informacion se levanta durante el mes julio de 1994 para lo cual se elaboro un formulario con los items de la informacion que se debia tomar de la Historia Clinica

La informacion recabada fue digitada y verificada en la computadora y la tecnica utilizada para el calculo de las tasas de continuacion fue el la de tabla de vida. Esta tecnica proporciona una serie de medidas que se denominan funciones de la tabla y que tienen mucha utilidad en analisis de mayor profundidad, sin embargo por tratase de un estudio piloto nos limitamos solo a la presentacion de las tasas de continuacion de las usuarias en el servicio

LA MUESTRA

El tamaño de la muestra y la distribucion en los dos centros quedo compuesta de la siguiente forma

Cuadro 1 Distribucion de la muestra por metodos y año de inicio, segun centro

	CENTRO Nº 1		CENTRO Nº 21		TOTAL	
	Nº	%	Nº	%	Nº	%
Año Inicio						
1989	76	19 1	122	25 9	198	22 8
1990	76	19 1	88	18 7	164	18 9
1991	78	19 6	108	22 9	186	21 4
1992	78	19 6	72	15 3	150	17 3
1993	90	22 6	81	17 2	171	19 7
Metodo						
DIU	327	82 2	297	63 1	624	71 8
Pildora	43	10 8	38	8 1	81	9 3
Otro	28	7 0	136	28 9	164	18 9
TOTAL	398	100 0	471	100 0	869	100 0

Fuente CEMOPLAF Estudio piloto de seguimiento clinico de usuarias de P F

RESULTADOS

Numero de Controles

El numero promedio de controles de las usuarias incluidas en el estudio es 2 8 el promedio es mas alto en el centro 21 con 3 3 controles que en el centro 1 con 2 5 controles Dado que el periodo de observacion es 5 años , el numero de controles que las usuarias reciben en los centros es relativamente bajo, como se observa en el cuadro 2

En la relacion de la distribucion de controles que las usuarias han recibido es similar en los dos centros que se estudian, sin embargo aproximadamente la quinta parte de usuarias optan por un metodo y nunca mas regresan a los centros, esta proporcion es mas alta en el centro 1 (24 4%) que en el centro 21 (16 3%)

Cuadro 2 Distribución delas usuarias por numeros de controles realizados segun centro

N° de controles	Centro N°1		Centro N° 21		Total	
	N°	%	N°	%	N°	%
0	97	24 4	77	16 3	174	20 0
1	86	21 6	85	18 0	171	19 7
2	72	18 1	69	14 6	141	16 2
3	38	9 5	56	11 9	94	10 8
4	35	8 8	47	10 0	82	9 4
5	20	5 0	32	6 8	52	6 0
6	11	2 8	31	6 6	42	4 8
7	10	2 5	21	4 5	31	3 6
8	7	1 8	17	3 6	24	2 8
9	7	1 8	18	3 8	25	2 9
10	5	1 3	8	1 7	13	1 5
11 y mas	10	2 7	10	2 1	20	2 2
TOTAL	398	100 0	471	100 0	869	100 0

Fuente CEMOPLAF, Estudio piloto de seguimiento clinico de usuarias de P F

Cambio de Metodo

El cambio de metodo es relativamente en el centro 1 apenas el 8% de las usuarias hizo cambios de metodos pero la gran mayoria hizo solamente un cambio, en el centro 21 el porcentaje que cambia de metodos es 18 5% pero igual que en el centro 1 la gran mayoria solo efectuo un cambio

Cuadro 3 Distribucion de las usuarias por numero de controles realizados, segun centro

N° de Cambios	Centro N° 1		Centro N° 21		Total	
	N°	%	N°	%	N°	%
0	366	92 0	384	81 5	750	86 3
1	27	6 8	70	14 9	97	11 2
2	3		14	3 0	17	2 0
3	2	0 8	2	0 4	4	0 5
5		0 5	1	0 2	1	0 1
TOTAL	398	100 0	471	100 0	869	100 0

Fuente CEMOPLAF, Estudio piloto de seguimiento clinico de usuarias de P F

Condicion de Actividad de las Usuarias

En la clasificacion de una usuaria en activa o inactiva para el centro ,se toma una definicion muy elástica, en el caso de usuarias de DIU se les dio un año de gracia despues de la fecha en que tenian que acudir al centro si no acudieron al control se les clasifico de inactivas para el servicio, en el caso de usuarias de píldora y de otros metodos el periodo de gracia fue de 6 meses El total de inactivas para el servicio con las definiciones anteriores fue para el centro 1 71 9 por ciento y para el centro 21 73 5 por ciento

Tasas de Continuacion

Con la informacion recolectada de las Historias Clinicas de las usuarias clacificandolas en activas e inactivas par el servicio y aplicando la metodologia especial, se obtienen las tasas de continuacion de las usuarias en el servicio las mismas que se presentan a continuacion

En el cuadro 4 Se presenta las tasas de continuacion de las usuarias para el total de los dos centros y para cada centro en particular, lo primero que se observa es que la desercion mas alta de usuarias se presenta durante el primer mes de uso, es decir del 100 % de mujeres que inician un metodo solamente el 62 44% regresan al centro para una segunda consulta o control. la desercion continua pero a un ritmo mas lento y es asi como al empezar el 6 mes de uso un poco mas de la mitad 52 6% acuden al control , al terminar el primer año de uso solamente el 43 1% tiene contacto con los centros al finalizar el segundo año de uso el 27 0% acuden a la consulta en los control y a los 4 años solamente se mantienen en el programa el 13 8 de las usuarias este porcentaje que se mantienen mas o menos hasta los 6 años

En el cuadro 4 tambien se presenta las tasas de continuacion segun el metodo con el cual las mujeres inician el uso en el centro, se observa tasas mas altas de continuacion entre las usuarias de DIU que entre las de Píldora, por ejemplo al finalizar el primer año de uso las tasas de continuacion son 46 08% y 39 57% respectivamente para las usuarias de los tipos de metodos otro ejemplo, a los 4 años de uso las tasas son 16 94% y 6 64% para los dos metodos

Cuadro 4 Tasa de continuación de usuarias, segun meses de uso, por tipo de metodo y por centro

Meses	Total	DIU	Píldora	Centro N°1	Centro N° 21
0	62 44	66.33	64.78	59 01	65 32
3	57 34	60 73	55 80	52 30	61 50
6	52 60	55 49	51.86	48 18	56 26
9	48 22	51 56	45 13	44 45	51 38
12	43 11	46 08	39.57	40 78	45 18
15	38 93	42 41	29 31	36 13	41 27
18	34 83	38 53	24 56	32 64	36 73
21	31 78	36 02	21 17	29 27	33 83
24	27 04	30 74	19.41	21.67	30 78
27	25 22	28 95	17 56	18 41	29 88
30	22 88	26 74	15 49	16 45	27 28
33	20 12	24 02	11 07	15 91	23 03
36	18 69	22.34	8 85	15.31	21 05
39	17 60	21 20	6 64	14 61	19 69
42	16 63	19 83	6 64	13 78	18 62
45	15 12	18 22	6 64	12 79	16 76
48	13 76	16 94	6.64	12.79	14 62
51	12 57	16 05	6 64	9 38	14 62
54	12 57	6 05	6 64	9 38	14 62
57	12 57	16 05	6 64	9 38	14 62
60	12.57	16 05		9.38	14 62
63	12 57	16 05		9 38	14 62

Fuente CEMOPLAF, Estudio piloto de seguimiento clinico de usuarias de P F

En el grafico 1 se observa la tendencia de las tasas de continuacion segun el metodo de inicio de uso que no es otra cosa que ver como de 100 usuarias que inician en los centros, algunas van abandonando el servicio a traves del tiempo y las que mantienen demandando los servicios del centro se representan por las lineas del grafico

Si bien el objetivo del trabajo no es hacer comparaciones ente los dos centros, sin embargo, se presenta la informacion para cada centro del estudio, con el unico fin de demostrar que las tasas varian de un centro a otro, y como se ve las tasas de continuacion son mas altas en el centro 21 que en el centro 1 tambien ver el grafico 2

En los cuadros 5 y 6 graficos 3 y 4 se presenta las tasa de continuacion para cada centro y segun el metodo con el cual las mujeres inician el uso La finalidad de presentar informacion no es otra que la de observar como el comportamiento de las tasas por metodo varian de un centro a otro

Cuadro 5 Tasas de continuación para las usuarias del centro Nº 1, segun metodo de metodo de uso inicial

Meses	Total	DIU	Pildora
0	59 01	59 62	60 47
3	52 30	53 38	46 24
6	48.18	49 36	41 24
9	44 45	46 64	30 39
12	40.78	43 70	25 55
15	36 13	40 54	9 58
18	32 64	37 12	9 58
21	29 27	33 92	9 58
24	21.67	25 94	4.79
27	18 41	22 96	00 00
30	16 45	20 44	
33	15 91	19 75	
36	15.31	18 97	
39	14 61	18 07	
42	13 78	16 97	
45	12 79	15 67	
48	12.79	15 67	
51	9 38	13 26	
54	9 38	13 26	
57	9 38	13 26	
60	9 38	13 26	
63	9 38	13 26	

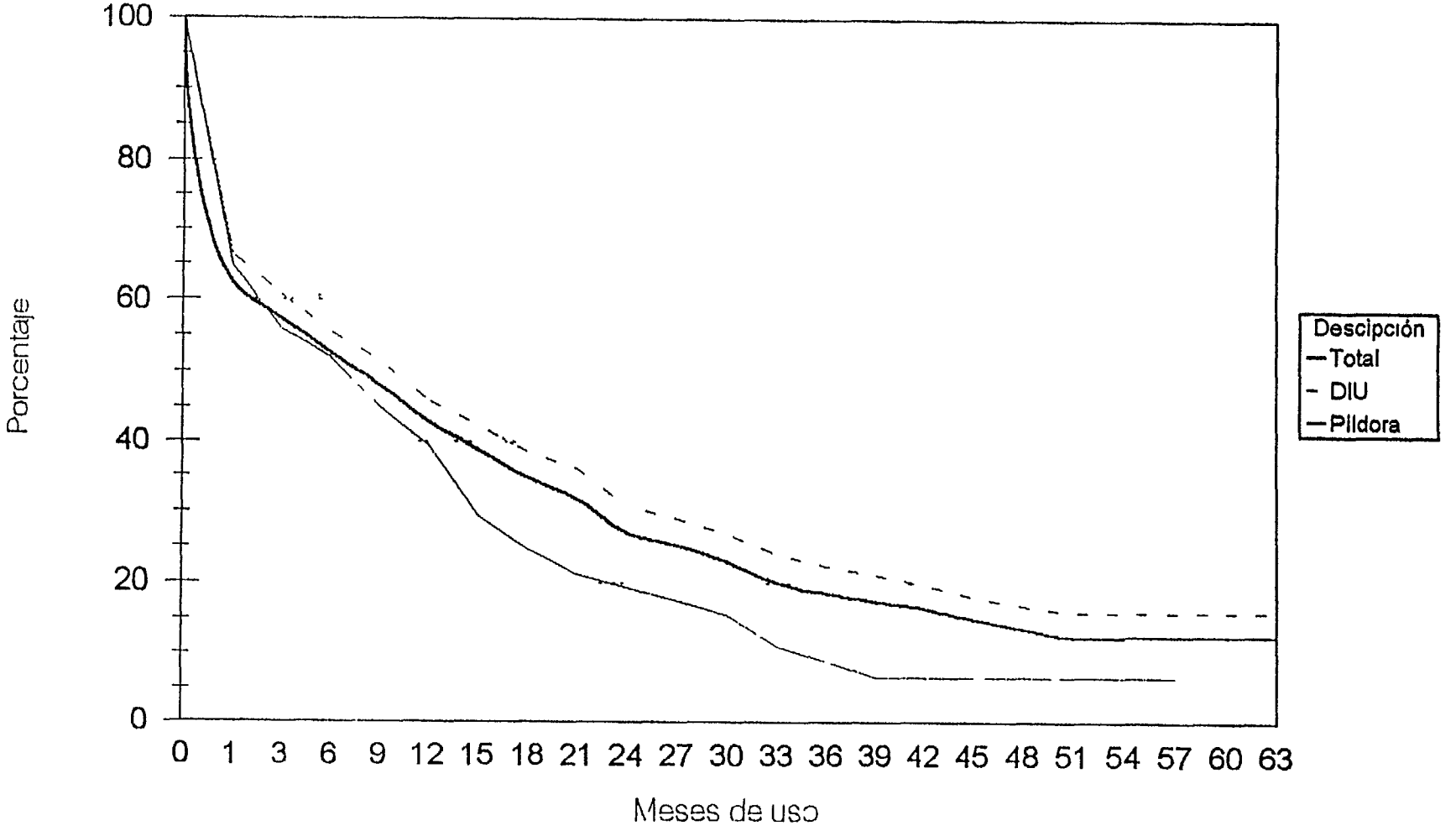
Fuente CEMOPLAF, Estudio piloto de seguimiento clinico de usuarias de P F

Cuadro 6 Tasas de continuacion para las usuarias del Centro Nº 21, segun método de uso inicial.

Meses	Total	DIU	Píldora
0	65 32	73 66	69 86
3	61 50	68 66	67 07
6	56 26	62.18	64 27
9	51 38	57 04	61 42
12	45 18	49.19	55.57
15	41 27	44 97	49 72
18	36 73	40 64	40 68
21	33 83	38 59	34 17
24	30 78	35.18	34.17
27	29 88	34 26	34 17
30	27 28	32 26	30 15
33	23 03	27 89	21 54
36	21 05	25 46	17 23
39	19 69	24 10	12 92
42	18 62	22 50	12 92
45	16 76	20 62	12 92
48	14 62	18.51	12 92
51	14 62	18 51	12 92
54	14 62	18 51	12 92
57	14 62	18 51	12 92
60	14.62	18.51	12 92
63	14 62	18 51	12 92

Fuente CEMOPLAF, Estudio piloto de seguimiento clínico de usuarias de P F

Grafico Nº 1 Tasa de continuacion en el servico del centro Nº 1 y Nº21 por metodo de uso inicial



Fuente CEMOPLAF estudio piloto de seguimiento clinico de usuarias de P F

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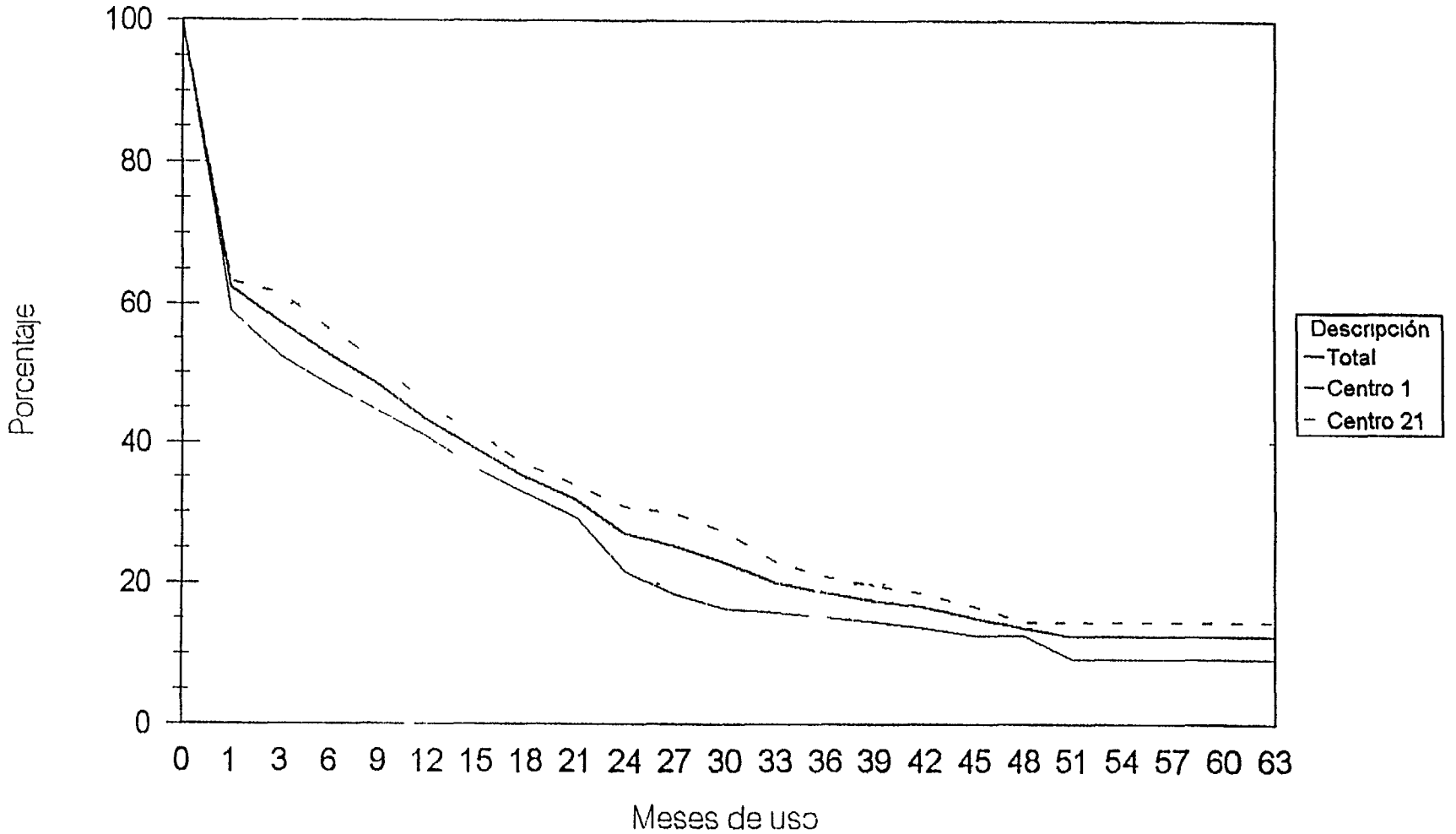
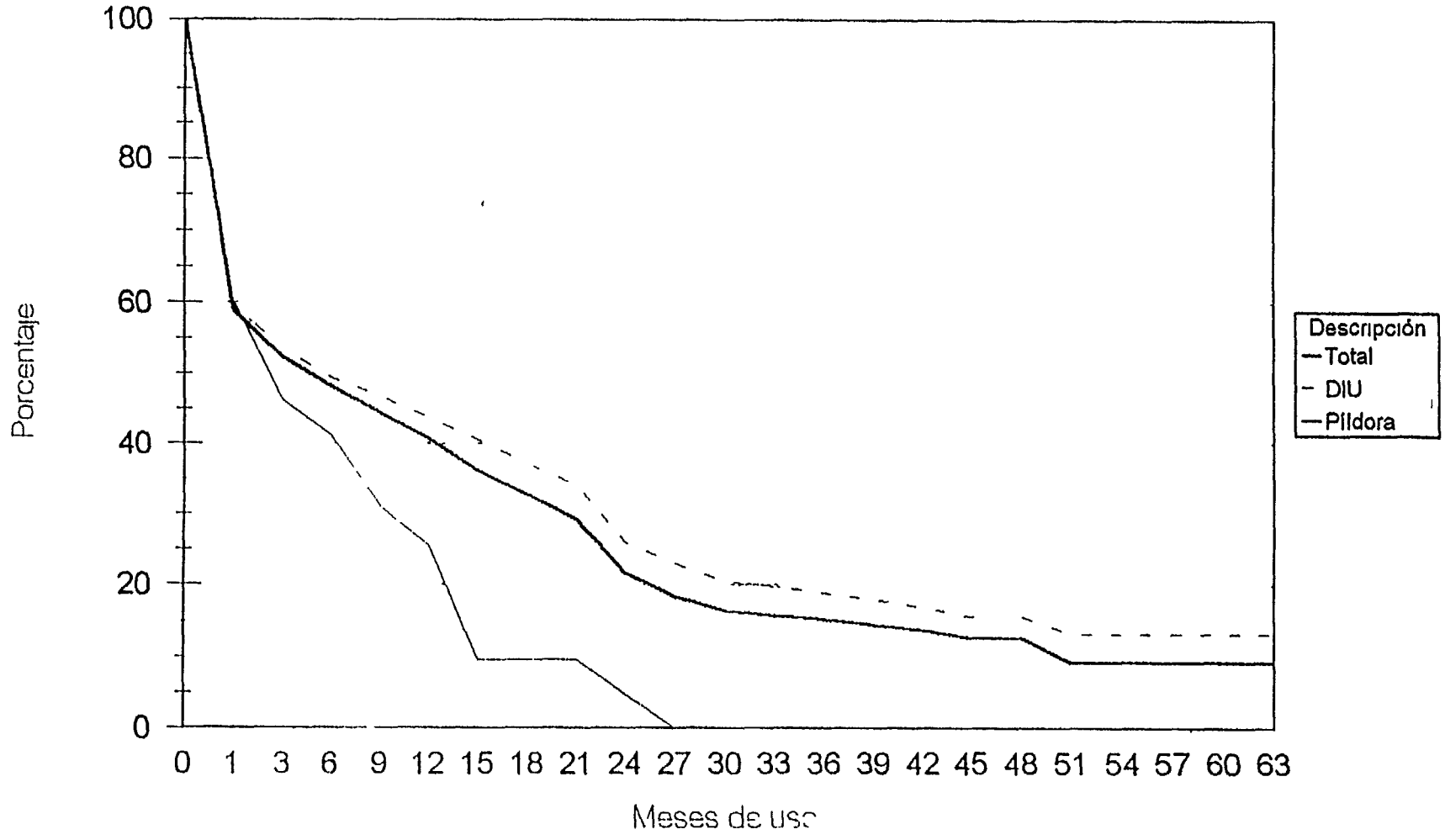
Grafico Nº 2 Tasa de continuacion en el servicio de usuarias de DIU y Pídora, por centro estudiado



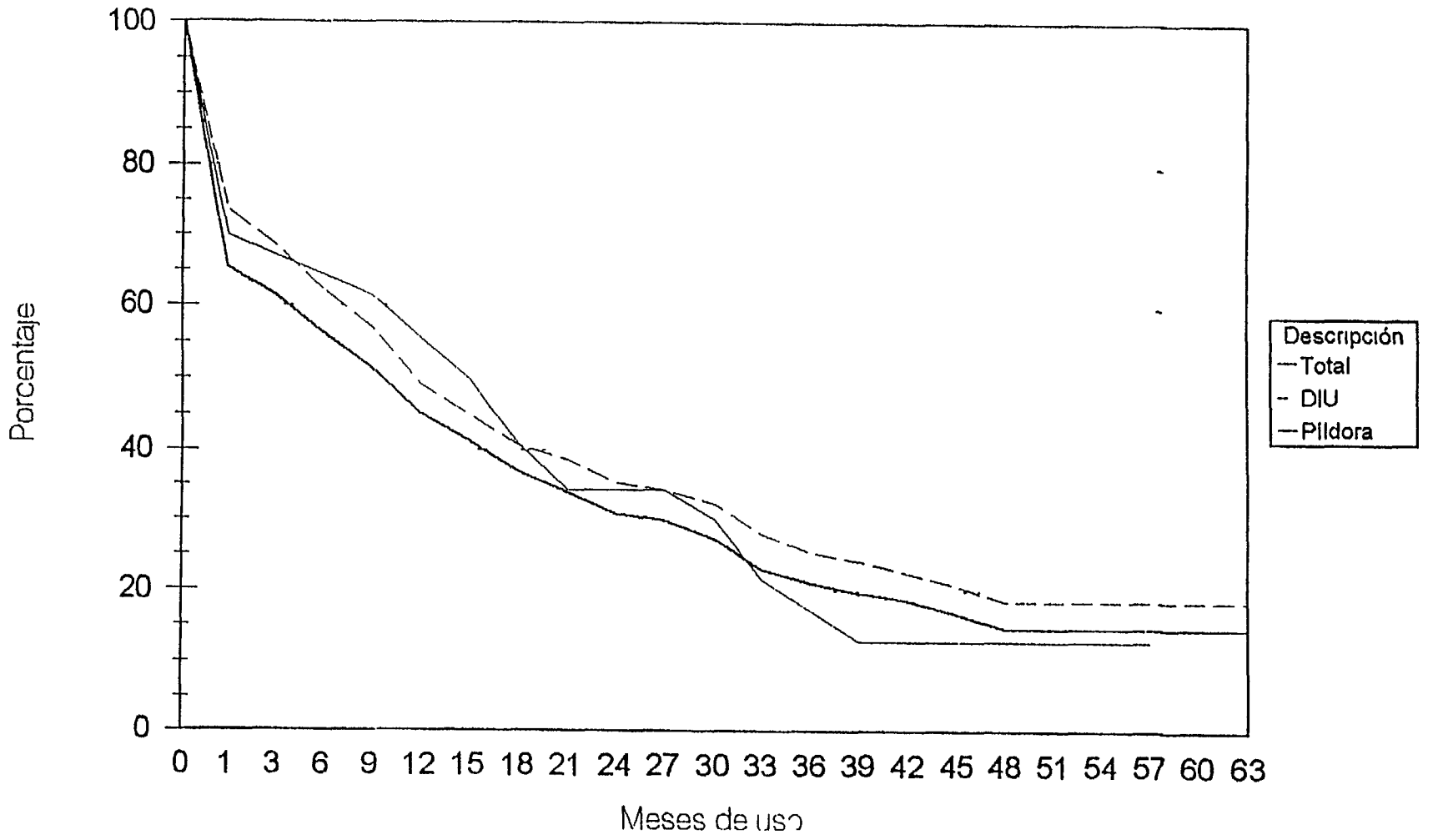
Fuente CEMOPLAF estudio piloto de seguimiento clínico de usuarias de PF

Gráfico Nº 3 Tasa de continuacion de usuarias
en el centro Nº 1 por método inicial



Fuente CEMOPLAF estudio de seguimiento clínico de usuarias de PF

Gráfico Nº 4 Tasa de continuación de usuarias en el centro Nº 21 por método de uso inicial



Fuente CEMOPLAF, estudio piloto de seguimiento clínico de usuarias de PF

Conclusiones y Recomendaciones

- Se estima que la proporcion de desercion de las usuarias a los centros son altas y estan influenciadas principamente por las usuarias que acuden al centro, optan por un método y no regresan nunca mas, la proporcion de usuarias que tienen este comportamiento es de alrededor del 30 % de las usuarias nuevas que ingresan a los centros

- Despues que la usuaria acude a un primer control, la probabilidad de desercion disminuye y usuaria se mantiene demandando los servicos del centro en promedio por 10 meses

- En general la desersión es mas alta entre las usuarias de Píldora y de Otros Metodos que entre las usuarias de DIU y varian entre los centros

- Se recomienta que el estudio se replique para todos los centros de CEMOPLAF Si por lo menos se conocen estos datos para cada centro se pueden tomar medidas correctivas tendientes a disminuir la desercion, con lo cual se incrementaria los ingresos del centro y se mejoraria el auto sostenimiento

- Las altas tasas de desersion de las usuarias a los centros plantean la necesidad de un estudio a profundidad que permita conocer las causas tanto de desercion del centro como de las causas de abandono del metodo Con estos resultados se podría tomar medidas correctivas que garanticen tasas mas altas de continuacion tanto en los centros como en el uso del metod.