Increasing Efficiency to Meet Future Demand: Family Planning Services Provided by the Mexican Ministry of Health

By David Hubacher, Matthew Holtman, Miriam Fuentes, Gregorio Perez-Palacios and Barbara Janowitz

Context: *With fewer external funds for family planning programs and a growing reliance on the public sector for services, developing countries will need to find new resources if they are to maintain existing levels of service. By estimating the costs of services and evaluating the service delivery system for inefficiencies, a better understanding of future resource needs can be achieved.*

Methods: *Data for this study were collected in 1996 at 82 Mexican Ministry of Health facilities, which included observations of providers and ancillary information for estimating costs of services. The cost per minute of provider labor was used to estimate the cost of various types of family planning visits and the cost per couple-year of protection for different contraceptive methods. Some service delivery parameters were modified hypothetically to estimate the effects on costs.*

Results: *Mexico's Ministry of Health is currently spending approximately $29 per person per year on contraceptive services. As demand increases, the system can be made more efficient by increasing the length of providers' workday and the proportion of time they spend with clients, and by dispensing more contraceptive protection at each visit. Increasing the proportion of time a provider spends with clients will reduce the cost per couple-year of protection for all methods. Doubling the number of pill cycles distributed during a visit reduces the cost per couple-year of protection from $27 to $19. Providing twice as many condoms per visit reduces the overall cost per couple-year of protection from $29 to $19. If providers lengthen their workday, increase the amount of time they spend with clients and dispense more contraceptives during a visit, the overall cost per couple-year of protection would decline from the 1995 level of $29 to $22 by 2010.*

Conclusions: *Correcting the service delivery inefficiencies that exist in their current system should enable the Mexican Ministry of Health to meet the rising demand for services without expanding current programs through the next decade.*

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Mexico has experienced dramatic demographic changes during the last quarter century. While its population increased from 48 million in 1970 to 93 million in 1995, Mexico's growth could have been even greater if fertility rates had not been reduced during the same time period. Mexico's total fertility rate dropped from 6.6 lifetime births per woman in 1970 to 2.8 per woman by 1995.[1]

Much of Mexico's fertility decline has been the direct result of increased contraceptive use. Contraceptive prevalence has more than doubled over the last 20 years, from 30% in 1976 to 66% in 1995.[2] The increase in contraceptive prevalence has been characterized by a shift toward use of longer term methods. In 1976, only 9% of contraceptive users were sterilized and 36% used oral contraceptives; currently, 42% of contraceptive users are sterilized, with the remainder using the IUD (22%), traditional methods (13%), oral contraceptives (13%) and injectables (5%). Additionally, the source of contraceptive services has changed over the past 20 years. The public and private sectors were each responsible for about half of contraceptives used in 1979;[3] by 1995, the public sector (which includes the Ministry of Health, the Mexican Social Security Institute and four other institutions) provided nearly three-quarters of all contraceptives used.[4]

While the reasons for the increasing dominance of the public sector are complicated, it is apparent that donor population assistance has contributed to this growth. During the 10-year period 1986–1995, yearly population expenditures provided by donors increased steadily, from less than $6 million to more than $22 million.[5] One of the major contributors has been the U.S. Agency for International Development (USAID), whose donations over the period 1993–1997 averaged $13.6 million per year.[6] Mexico will no longer have that source of funds, however, since USAID ended its assistance program in April 1999. The possibility that global donor assistance to Mexico will decline in the future raises concerns about the ability of the public sector to meet both current demand and projected demand for family planning services.

The Mexican Ministry of Health is an important service provider within the public sector, providing nearly a quarter of publicly funded family planning services. In 1995, there were more than 24 million women of reproductive age (15–49) in Mexico, and this number is expected to grow to more than 31 million by 2010.[7] If the Ministry of Health is to continue to provide contraceptive services at its current rate, it will need to generate more services over the next 10 years to satisfy this expected increase in demand. Although the ministry may be successful in persuading Mexican legislators to allocate more funds to family planning, it is uncertain whether such a step will be sufficient to maintain and expand service coverage to low-income groups, who are the traditional market of the public sector. One way that the Ministry of Health program can cope with the decline in donor funds is to increase the efficiency with which services are generated. A first step is to determine how resources are used currently to provide services and whether there are ways to improve the use of these resources to expand services.

In this article, we examine how resources are used to generate family planning services, and we measure the productivity of providers by observing how much total time they spend with clients. We use this information, together with data on the cost of resources, to determine the costs associated with providing different types of family planning services. Finally, we project the costs of family planning services under various assumptions concerning improvements in resource productivity.

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Table 1. Twelve-month continuation rates, median length of use (in months) and commodity requirements per couple-year of protection (CYP), by contraceptive method

Method	Continuation rate	Length of use in months*	Requirements for one CYP†
Pill	0.52	12.9	14 cycles
Injectable	0.49	11.7	12.6 injections
Condoms	0.63	18.0	105 units
IUD	0.72	25.3	1 device
Sterilization‡	na	129.6	1 procedure

*Calculated using a life-table methodology, assuming constant risk of discontinuation from month to month. The monthly survivorship function s is estimated from the 12-month continuation rate r using $s=r^{1/12}$; the median number of months of continuation t is solved for in the equation st=0.5. †CYP requirements for oral contraceptives, condoms and injectables correspond to "empirical" CYP conversion factors from Stover J et al. (see table sources). The requirement for one-month injectables was calculated from conversion factors for two- and three-month injectables. ‡The average age at sterilization is 30 years (see reference 1). Following the recommendations of Stover J et al. (see table sources), this corresponds to 10.8 years of contraceptive protection. *Note:* na=not applicable. *Sources:* **Oral contraceptives, injectables and IUDs**—Instituto Nacional de Estadística, Geografía e Informática, *Encuesta Nacional de la Dinámica Demográfica*, Mexico City: Instituto Nacional de Estadística, 1992; **condoms**—Hatcher RA et al., *Contraceptive Technology, 16th ed.*, New York: Irvington Publishers, 1994; **sterilization**—Stover J et al., *Empirically Based Conversion Factors for Calculating Couple-Years of Protection*, Chapel Hill, NC: The Evaluation Project, 1997.

Specifically, the scenarios we consider are increases in the amount of time a provider spends with clients and in the amount of resupply methods (oral contraceptives and condoms) provided to clients at visits.

Methods

Estimating Family Planning Visit Costs

We estimate the costs to the Ministry of Health of providing contraceptive services, taking into account the costs of service provision only.* We calculate the cost of a family planning visit as the sum of the costs associated with three basic components: labor, capital and supplies.

•*Labor costs.* In terms of labor, we consider providers and support staff who keep the facility functioning; the latter are defined as workers who do not provide any direct services to clients (e.g., managers, secretaries, maintenance crews and record-keeping staff). The cost of provider labor for a given type of family planning visit is determined by multiplying together two key factors: the length of the visit (in minutes) and the cost per minute of the provider's labor. On occasions when more than one provider is involved in the service delivery effort, the time of both providers is included. For sterilization, up to three different surgeons, six different nurses and one anesthesiologist may work together on any one procedure.

We estimated the cost per minute of provider labor by dividing the monthly cost of employing the provider by the total number of minutes per month that he or she spends interacting with clients. Since the time interacting with clients is a subset of the total workday, the cost per minute estimate that we use is inflated to account for costs associated with activities such as preparation, leaving a work station for supplies and miscellaneous errands. This approach has been used previously.[8]

We allocate the sum of monthly support staff labor costs among the facility's health providers, giving each an equal share of the total cost. This cost is then assigned to family planning visits proportionate to the amount of time each visit takes.

•*Capital and supply costs.* Capital goods (defined as those that last more than one year) include the facility, land, furniture and equipment, and instruments; their costs are estimated on a per visit basis by taking the annualized current value† and dividing this by the number of visits that occur over a year. The value of the physical facility is estimated by multiplying the area of the building by the cost per square meter of construction. The value of land is handled similarly. The costs of both the facility and land are annualized over a period of 30 years, using a discount rate of 6%. For furniture and equipment, the replacement value of the goods is annualized over a life of 10 years; the replacement value of instruments is annualized over five years. We used the floor plans of the facilities to determine the proportion of space devoted to family planning, which we then used to determine the family planning share of these costs. Some physical areas are used for various types of services; this space was apportioned to different services according to service statistics revealing the distribution of client-types over time (family planning, maternal and child health, and basic health services).

Some types of family planning services require single-use materials (e.g., cotton, antiseptic solutions and contraceptives). We estimated the cost per visit for these items by multiplying the cost per unit of the material by the amount used in a typical visit. Ministry of Health purchasing records were used to determine the cost of the contraceptives. In 1996, the Ministry of Health paid the following amounts to procure contraceptives for its nationwide system of clinics: $2.11 for each IUD, $0.52 per cycle of oral contraceptives, $1.17 per ampoule of the monthly injectable and $0.77 per dozen condoms. (While it is true that the government of Mexico has received donations of contraceptive supplies from various sources, we deliberately left this out of our calculations and assumed that all contraceptives are purchased with Ministry of Health funds.)

•*Types of family planning visits.* For most contraceptive methods, we considered three types of visits: the information visit, the acceptance visit and the follow-up visit (or visits). The information visit occurs when a nonuser receives information about family planning and then leaves the clinic without adopting a method. The actual purpose of the visit may have been for other health matters, though the topic of family planning arose during the consultation. The acceptance visit is when a nonuser (or a client seeking a new contraceptive method) leaves the clinic with a method. Finally, a follow-up visit is one in which a current user returns for some method-related reason (for resupply or because of side effects); this broad category also includes a removal visit for an IUD user.

•*Estimating and calculating costs per couple-year of protection.* Visit costs are useful in comparing the costs of a specific type of family planning consultation across different facilities and providers. However, to compare the costs of different methods, costs should be standardized over some period of protection and all costs incurred during that period should be considered, including the total costs of follow-up care and of resupply. We present costs per couple-year of protection (CYP). Using this technique, we can directly compare methods that have different periods of protection; for example, using CYPs, we can compare the cost of sterilization (which has very high initial costs, yet provides many years of contraceptive protection) with the cost of oral contraceptives, which typically provide the average user with fewer years of protection because of discontinuation.

Calculating the cost per CYP involves two separate steps. The first step is to sum all costs associated with initiating use of a contraceptive method and with continuing to use it for a period of time that is typical for that method. Information on the median length of use for different methods, as well as on the contraceptive requirements for one CYP, is needed (Table 1). The second step involves adjusting this sum to an annual basis (dividing it by the average period of use in years), and thus

*Costs of activities that complement service provision (training; information, education and communication; and evaluation) and management costs associated with activities at the regional and national level are excluded.

†The value if purchased today.

converting it to a cost per CYP.

For contraceptive protection during a typical period, various clinic visits are required. It is assumed that all contraceptive users receive one information visit prior to the acceptance visit, and IUD users have a requisite removal visit that must be taken into account. The total cost of follow-up care depends on the cost of each follow-up visit and the number of follow-up visits realized, or required, for a typical period of use.

The number of follow-up visits for oral contraceptive and condom users depends on three factors: the typical length of use, the CYP requirements for one year and the number of units given to the client at the time of the acceptance visit and during follow-up visits. (Information on units distributed allows a direct calculation of the total number of visits necessary to maintain contraceptive protection over the typical period of use.) For IUD users, the number of follow-up visits is documented in clinic records. For users of injectables, the number of injections required for a typical duration of use is simply the length of typical use in months, since users of a one-month injectable need one visit (injection) per month of use. For interval sterilizations, the additional one-time cost of a night in the hospital is included; for postpartum sterilization procedures, this cost does not apply, since it is absorbed during the stay in the maternity ward. We assumed that sterilization clients return for only one follow-up visit after surgery.

Program Changes and Cost Projections

To explore how a future increase in demand for family planning services can be met with existing resources, we assessed the impact of making hypothetical changes in work patterns (without increasing the Ministry of Health's labor costs). The work patterns we changed are the length of the workday and the time that providers spend with clients, which we set (separately) to match the top 20% of those observed in our study. We then estimated the impact on costs per CYP for each method. Additionally, we assessed the impact of providing more contraceptive protection at each visit for resupply methods.

The effect of these changes on the Ministry of Health's average CYP cost (weighted by the method mix) was then used to estimate the institution's capacity to meet the expected rise in demand for services. All models assumed that the supply of clients is unlimited and that any improvements in the way services are delivered (to make them more efficient) will result in an increase in the number of clients served. (In other words, we assumed that there is sufficient demand for services to drive the projected efficiency improvements.)

Source of Data

Data for estimating the costs of providing family planning services were collected in 1996 at Mexican Ministry of Health facilities. The primary effort involved daily observations of nurses and physicians. For outpatient services, 10 research teams (consisting of two persons each) spent five workdays at each facility observing nurses and physicians to document how they used their time. One physician and one nurse were observed each day. Some hospitals assign particular physicians and nurses to provide all the family planning services for that facility; in this situation, we focused on these individuals, since it was important to observe as many family planning services as possible, in order to estimate better the time clinicians spend providing these services. At hospitals, teams spent an additional week observing the operating theater and the daily routine of staff who participate in surgical procedures (e.g., female sterilization). Staff exiting the operating theater were interviewed to obtain information on how much of their pre- and postsurgery time was spent on sterilization services.

In smaller facilities, where services are organized horizontally (all clinicians provide all types of services, ranging from family planning to prenatal care to infant and child health), we randomly selected the providers to be observed and attempted to observe as many different providers as possible during the week. If the facility did not have a minimum of five physicians and five nurses, we observed some clinicians for additional days to fill out the week. Because the smallest facilities have only one physician and one nurse, we observed the same person for the complete week. Some health auxiliary units employ only one clinician (a nurse or physician). The administrative offices of the different facilities provided payroll and benefits information.

Capital items (furniture and instruments) used in consultation rooms were recorded, and their purchase prices were investigated. We obtained floor plans of the facilities and collected estimates of the cost per square meter of construction (as provided by local officials in charge of reviewing and commissioning public works projects). Local government offices provided estimates on land values.

Interviews with providers were conducted to estimate the amount of materials (e.g., disposable and contraceptive commodities) used in different types of family planning visits. The costs of the materials on a per unit basis were retrieved through purchasing records. Service statistics from existing ministry documents and data from patient revisit cards were transcribed onto our forms. Data on method continuation rates, contraceptive prevalence, source of methods, and current and future population estimates were furnished by various Mexican institutions. Data collection was carried out by Soporte Técnica, SA de CV, a Mexico City firm. The interviewers and observers were trained and tested by staff at the Ministry of Health and by company supervisors.

Sampling

In order to generalize the results of this study to the national level, we used a stratified random sampling strategy to select clinics and providers. The selection process was done in four stages, corresponding to the following divisions: state, jurisdiction (a smaller geopolitical administrative area), health center and health provider. We assigned the 31 states in Mexico to one of three geographic zones: North, Central and South. The states in each zone were then ordered in terms of their 1994 performance in family planning service provision. This ranking of states was compiled by the Ministry of Health and took into account a dozen different indicators (including family planning coverage, numbers of new users and whether service goals established in the previous year had been met).[9] The states were then classified as high, medium or low performance. One state from each category was selected randomly, for a total of nine different states. The Federal District was the 10th area included in the study.

The number of jurisdictions in each state ranged from three to 19. All jurisdictions in each of the chosen states and the Federal District were listed, and one was selected randomly from each state. One hospital, two urban health centers, two rural health centers, two rural health posts and two auxiliary health units were randomly selected from each jurisdiction. In the event that the selected jurisdiction did not have enough of each type of facility to complete the sample, facilities from a neighboring jurisdiction in the selected state were used as necessary. In the Federal District, only one hospital and two urban health centers were used, since smaller facilities are not located there. Providers were selected for observation using a random sampling plan that took into account the number of providers and the organization of service provision. In total, the data collection plan

Table 2. Mean number of minutes per workday and percentage of workday that a provider allocates to selected activities in an outpatient delivery environment, by type of provider

Activity	Nurse		Physician	
	Mean	%	Mean	%
Total	**383**	**100.0**	**372**	**100.0**
Client services	**143**	**37.3**	**176**	**47.3**
Within clinic				
Family planning	27	7.0	28	7.5
Maternal and child health	31	8.1	62	16.7
General health	48	12.5	71	19.1
Health talks	1	0.3	1	0.3
Outside clinic				
Home visits	36	9.4	14	3.8
Other work	**187**	**48.8**	**130**	**34.9**
Direct support of services*	93	24.3	55	14.8
Indirect support of services†	94	24.5	75	20.2
Other time	**53**	**13.8**	**66**	**17.7**
Personal time	16	4.2	21	5.6
Unoccupied time	37	9.7	45	12.1

*Includes preparing and organizing the workspace and doing paperwork. †Includes running errands, having work discussions with colleagues and other miscellaneous activities. *Note:* Totals may not add to 100 due to rounding.

consisted of 394 days of observation of physicians and 356 days of observation of nurses at 82 different health care facilities, ranging from small rural auxiliary health units to urban hospitals.

Results

Work Patterns of Providers

On average, as is shown in Table 2, nurses spend less than six and one-half hours (383 minutes) per day at work and physicians work roughly six and one-quarter hours (372 minutes). Both nurses and physicians spend less than half of their average day with clients (37% and 47%, respectively), and devote less than half an hour per day to delivering family planning services. Nurses spend more than three hours per day (49%) performing other work that supports service delivery, such as preparing the workspace, doing paperwork and getting supplies. Physicians spend a little more than two hours per day on other work (35% of their total day). "Other" time is subdivided into personal time (time on work breaks and time with friends and family who visit) and unoccupied time (periods when the provider is waiting for clients and is not engaged in any other work activity). Slightly less than one hour of a nurse's day is in personal or unoccupied time, compared with slightly more than one hour of a physician's day (14% and 18% of their total workday, respectively).

Cost per CYP for Different Methods

The costs of different methods for typical periods of use vary considerably (Table 3). Follow-up visit costs for reversible methods constitute 52–64% of the total cost. Sterilization procedures, because of their high initial costs, are the most expensive to provide before adjusting for length of use. After standardizing the cost to one year of use, however, we find that sterilization becomes the least expensive method to provide. The IUD is the least costly reversible method, while the one-month injectable is the most costly. More detail on the component costs (e.g., capital, materials and labor) and the calculations involved in estimating CYP costs are given elsewhere.[10]

Impact of Hypothetical Program Changes

•*Changes in work patterns.* When work patterns were set to match the top 20% of providers observed, the workday became 420 minutes (seven hours) for physicians and 434 minutes (almost seven and one-quarter hours) for nurses; time with clients became 68% of the workday for physicians and 58% for nurses. Increasing client time reduces the CYP costs for all methods more than does lengthening the providers' workday (Figure 1). By increasing client time, the CYP cost reductions average 24%, ranging from a low of 18% for female sterilization to a high of 29% for IUDs. Lengthening the providers' workday reduces the method CYP costs by 8–10% below baseline estimates.

•*Impact of distributing more contraceptives at each visit.* As noted previously, the costs of follow-up visits for resupply methods are a significant part of the overall CYP cost (40–80%). Because providers distribute only one or two cycles of oral contraceptives or about a dozen condoms at both acceptance and follow-up visits, the number of resupply visits is unnecessarily high and raises the costs of follow-up care.

The cost per CYP for oral contraceptives and condoms could be significantly lowered by reducing the number of follow-up visits required. The impact of doubling the number of oral contraceptive cycles and the number of condoms supplied at both the acceptance and follow-up visits is dramatic (Figure 2). The cost of oral contraceptives drops from $27 to $19, a reduction of 29%, while the cost of condoms drops 34% to nearly $19 per CYP. (Although supplying more contraceptives at each visit might even increase continuation rates, and lower the CYP costs even more, we assume no such impact for purposes of this analysis.)

•*Improving efficiency in the system.* In 1995, 15% of all Mexican women using contraceptives received their method from clinic-based services at the Ministry of Health;[11] using population estimates from the same year,[12] this is equivalent to nearly 1.4 million couples. If the Ministry of Health clinics maintain their 15% share of the family planning market and the Mexican population continues to grow at about 1.5% per year,[13] the ministry can expect to provide contraceptives to nearly 1.8 million couples through its clinic-based program in the year 2010.

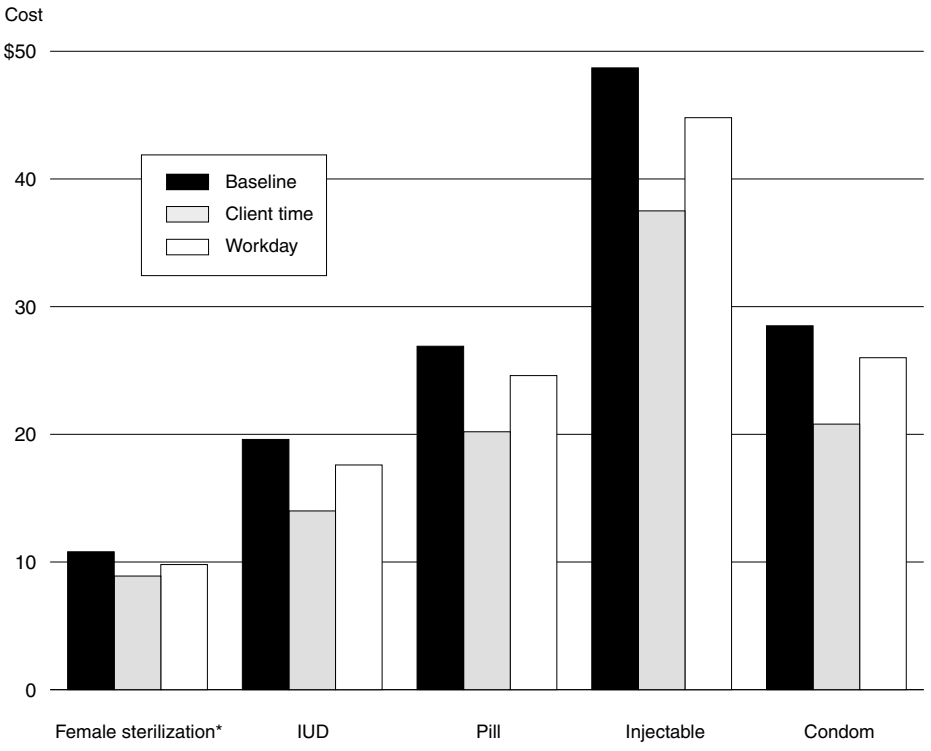
We estimate that the Ministry of Health's average cost per CYP (weighted by the method mix) was about $29 in 1995. Inefficiencies in the current service delivery system make CYP costs artificially high; however, as the population grows (and demand increases) these costs can be reduced over time. Figure 3 (page 124) shows that if providers were to increase client time and lengthen their workday as described previously, the cost per CYP would decline over time to about $25 per CYP in 2010.

Table 3. Costs (in $US) for typical use, by type of cost, and costs per CYP, all according to contraceptive method

Type of cost	Pill	Condom	One-month injectable	IUD	Female sterilization	
					Interval	Postpartum
Total cost	**$28.87**	**$42.79**	**$46.65**	**$42.16**	**$185.88**	**$89.65**
Information visit*	2.49	2.49	2.49	2.49	2.49	2.49
Acceptance visit	3.17	2.92	5.97	7.87	75.41	84.65
Follow-up visits†	15.39	27.29	24.01	23.93	2.51	2.51
Removal visit	na	na	na	5.75	na	na
Night in hospital	na	na	na	na	105.47	na
Contraceptive commodities	7.81	10.08	14.17	2.11	na	na
Total cost per CYP	**26.91**	**28.52**	**48.71**	**19.65**	**17.21**	**8.31**

*All visit costs include labor, capital and material components. †Number of follow-up visits varies by method: oral contraceptives, 6.5; condoms, 12.2; injectable, 10.5; IUDs, 3.6; female sterilization, 1.0. *Notes:* Length of typical use varies by method. na=not applicable.

Figure 1. Baseline cost per CYP for selected contraceptive methods, and estimated costs after time spent with clients is increased or after the length of the workday is increased



*The cost estimates for female sterilization are weighted averages taking both the cost of the technique and its prevalence into account. Thus, the total baseline cost ($10.80) represents 75.7% of female sterilizations being postpartum procedures (at $8.30 per procedure) and 24.3% being interval procedures (at $17.20 per procedure).

This suggests that the Ministry of Health could absorb any increase in demand for services that occurs from natural population growth through the year 2010 without hiring more personnel. If, in addition to increasing their labor productivity, providers dispensed more contraceptives at each visit, the 1995 CYP costs could be reduced immediately to $25 and to $22 by serving 1.8 million couples in 2010.

Discussion

In light of decreased external funding for family planning and the potential for greater demand for services, the Mexican Ministry of Health has to consider various options for reducing the costs of services. We have outlined several ways in which the productivity of the ministry's service delivery system can be improved. Specifically, this can be accomplished by increasing both the providers' workday and the proportion of time they spend delivering services, and by reducing the number of visits for resupply methods (by distributing more contraceptive protection at all visits). Our projections show that the Ministry of Health can meet the anticipated demand for family planning services without any increases in overall program costs well into the next decade.

This optimistic outcome depends on various assumptions. First, and foremost, providers must respond to increases in demand with commensurate increases in productivity. Is this feasible? Regulations governing employment contracts for health care providers at the Ministry of Health indicate that an eight-hour workday is the standard.[14] Though we were modest in setting the workday to well under eight hours per day (seven and one-quarter hours or less) and actually observed at least this level of work effort in just 20% of our sample, such an improvement in length of workday may nevertheless be difficult to achieve nationwide. Increasing the proportion of time that providers spend with clients would require reductions in the amount of time devoted to other activities. This can be achieved if providers manage these other tasks more efficiently or have lower paid personnel perform them, depending on the activity.

To achieve higher standards in both components nationwide, the Ministry of Health may need to improve the overall supervisory structure of its system. For example, area managers might have to review work schedules on a periodic basis to ensure that health care personnel are providing services for the required number of hours per day. Of course, it is possible that radical changes in the supervisory structure may not be indicated; as the growing population places new demands on the system, Ministry of Health staff may respond naturally and adjust work patterns accordingly.

Providing more contraceptive protection at each visit for resupply methods can be easily accomplished. In our hypothetical exercise, we doubled the amount of oral contraceptives and condoms dispensed; for oral contraceptives, this raised the numbers of cycles per visit to the recommended number suggested by the Mexican government.[15] Increasing the number of cycles also echoes the recent recommendation of a review team, which assessed population activities in Mexico.[16] Even greater savings could be realized if the program were to adopt WHO-endorsed guidelines suggesting that a full year's supply of oral contraceptives be provided at the time of acceptance.[17]

Certain aspects of the methods we used in our research have inherent weaknesses that need to be pointed out and discussed. For example, we will never know for sure how our observation of providers may have altered their work patterns or activities. If anything, our presence may have artificially improved performance. If this is the case, our estimates represent a best-case scenario, and actual CYP costs may be even higher than reported. Thus, there may be more inefficiencies in the cur-

Figure 2. Baseline cost per CYP for oral contraceptives and condoms, and estimated costs if more contraceptives are distributed per visit

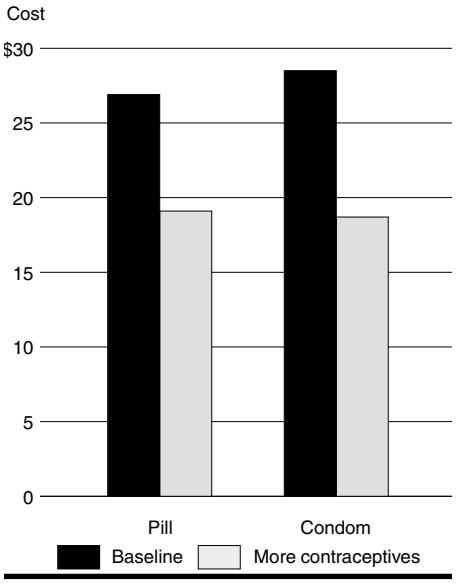
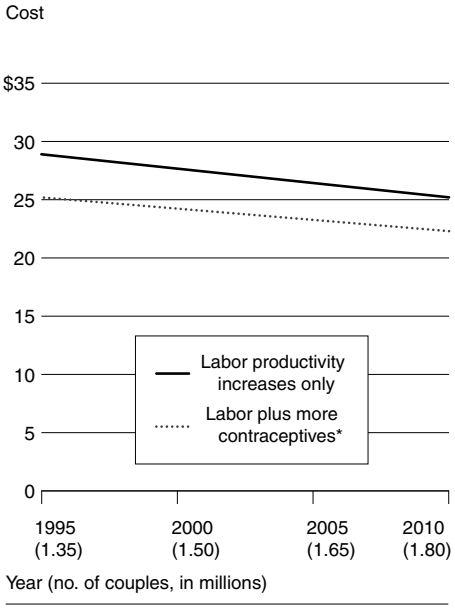


Figure 3. Cost per CYP, by year and projected number of couples using modern methods, according to change in service provision



*Labor productivity increases combined with increases in the contraceptive protection provided at each visit.

rent system than we were able to measure, which will give the Ministry of Health even more opportunity to service the country's growing population with existing resources.

For lack of a better concept, we used CYPs as the basis for estimating costs. The CYP measure has been criticized on a number of levels. Most importantly, the conversion factors used to translate the number of contraceptives distributed into an estimated period of protection assume that providing a contraceptive ensures use and that use ensures protection; these assumptions fail to account for compliance, continuation, consistency of use and contraceptive failure.[18] This weakness is noteworthy only in terms of estimating and comparing the costs of different methods. The relative changes in the labor component of our CYP costs, however, are unaffected by the shortcomings of this measure.

Our projections assume that demand for services will increase proportionally with the natural rate of population growth. However, if the Government of Mexico's national contraceptive prevalence goal of 70% is achieved in the year 2000,[19] the increase in demand will outpace population growth. Depending on whether this goal is reached and what share of the increase in contraceptive prevalence is absorbed by the Ministry of Health, the institution may need to become more efficient in a shorter time frame than what we have outlined in this paper. In other words, the resources garnered by the removal of inefficiencies in the current system could be exhausted sooner and could force the Ministry to expand its workforce after all and to increase overall program costs.

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Resumen

Contexto: *Debido a que los fondos externos para los programas de planificación familiar son menores y a que hay una mayor tendencia a recurrir a los servicios del sector público, los países en desarrollo deberán encontrar nuevos recursos si deásean continuar manteniendo los niveles actuales de servicios en este campo. Mediante el cálculo de los costos de los servicios y la evaluación del sistema de prestación de los mismos para verificar los aspectos de ineficacia, se puede lograr un mayor conocimiento de las necesidades futuras de recursos.*

Métodos: *Los datos que se utilizaron para este estudio fueron recopilados en 1996, en 82 centros de salud del Ministerio de Salud de México; el estudio incluyó trabajos de observación de los prestadores de servicios e información adicional para calcular los costos de estos servicios. El costo por minuto del servicio prestado fue utilizado para calcular el costo de los diversos tipos de visitas de planificación familiar y el costo anual de protección-pareja con diferentes métodos anticonceptivos. Se modificaron hipotéticamente algunos parámetros del servicio para calcular los efectos sobre los costos.*

Resultados: *El Ministerio de Salud de México gasta actualmente aproximadamente US $29 anuales por persona por concepto de servicios de anticonceptivos. A medida que aumenta la demanda, el sistema puede ser más eficaz si se prolonga la jornada de trabajo de los prestadores y la proporción de su tiempo que emplea con sus clientes, y si se ofrece mayor protección anticonceptiva en cada visita. Si se aumenta la proporción del tiempo que dedica a las clientes, el prestador de servicios lograría reducir el costo anual de protección-pareja con respecto a todos los métodos. Si se duplica el número de los ciclos de píldoras anticonceptivas que se distribuyen durante las visitas, se reduciría el costo anual de protección-pareja de US $27 a US $19. Si se duplica la distribución de condones que se ofrecen por visita, se reduciría el costo anual de protección-pareja de US $29 a US $19. Si los proveedores del servicio prolongan su jornada de trabajo, aumentan la cantidad de tiempo que asignan a las visitas y distribuyen un mayor número de anticonceptivos por visita, el costo global de protección-pareja por año se reduciría del nivel de 1995 de US $29 a $22 en el año 2010.*

Conclusiones: *Si el Ministerio de Salud de México corrige los defectos del servicio de distribución de anticonceptivos que existen en su sistema actual, podría atender la creciente demanda de servicios sin tener que ampliar los programas en la próxima década.*

Résumé

Contexte: *Face à la réduction des fonds extérieurs consentis aux programmes de planning*

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familial et au recours croissant aux prestations du secteur public, les pays en voie de développement se doivent de trouver de nouvelles ressources s'ils désirent maintenir leurs niveaux de prestations existants. L'estimation des coûts des services et l'identification des inefficacités des systèmes de prestation permettent de mieux comprendre les besoins de ressources à venir.

Méthodes: *Les données de cette étude ont été recueillies en 1996 auprès de 82 établissements du ministère de la Santé du Mexique, à travers l'observation des prestataires et l'obtention d'autres informations utiles à l'estimation des coûts des prestations. Le coût par minute de main-d'œuvre de prestation a servi à estimer celui des différents types de consultations de planning familial et celui par année-couple de protection des différentes méthodes contraceptives. Certains paramètres de prestation ont été modifiés de manière hypothétique pour en estimer les effets sur les coûts.*

Résultats: *Le ministère de la Santé du Mexique dépense actuellement environ US$29 par personne par année de prestations contraceptives. A mesure de l'augmentation de la demande, l'efficacité du système peut être renforcée moyennant le prolongement des heures de travail des prestataires et l'augmentation de la proportion de temps consacrée à la clientèle, ainsi qu'à travers la distribution d'une quantité accrue de contraceptifs à l'occasion de chaque visite. L'augmentation de la proportion de temps consacrée à la clientèle réduira le coût par année-couple de protection de toutes les méthodes. Le redoublement du nombre de cycles de pilules prescrites à l'occasion d'une visite fait baisser le coût par année-couple de protection de US$27 à US$19, et celui du nombre de préservatifs remis à chaque visite permet de réduire le coût global par année-couple de protection de US$29 à US$19. Si les prestataires prolongeaient leurs heures de travail, accroissaient la quantité de temps consacrée à la clientèle et distribuaient plus de contraceptifs à l'occasion de chaque visite, le coût global par année-couple de protection diminuerait, du niveau de US$29 en 1995, à US$22 d'ici l'an 2010.*

Conclusions: *Par la correction des inefficacités du système existant, le ministère mexicain de la Santé devrait être à même de satisfaire à la demande croissante de prestations sans expansion de ses programmes actuels durant les dix années à venir.*