

A Client-centered Approach to Family Planning: The Davao Project

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The reproductive health approach to family planning shifts the focus of service provision from macro-level demographic objectives to meeting clients' needs. Little field experience exists to date, however, to indicate how to implement this approach. This study describes a field project in Davao del Norte and Compostela Valley provinces in the Philippines that implemented the reproductive health approach on a quasi-experimental basis. The intervention was designed to address clients' self-defined reproductive needs by providing them with relevant and accurate information and services of good quality. It consisted of two components: Providers were trained in information exchange at fixed clinics, and supervisors were trained in facilitative supervision. The results presented here indicate that the client-centered intervention was successful in enhancing service providers' knowledge and improving the content of information exchange between providers and clients. One provincial health officer has expanded the intervention throughout his province, while other provinces are interested in duplicating the model. (STUDIES IN FAMILY PLANNING 2001; 32[4]: 302–314)

The new paradigm for family planning programs outlined at the 1994 International Conference on Population and Development in Cairo envisions the practice of family planning as voluntary and family planning programs as free of demographic targets. It places family planning in context as a comprehensive, client-centered service that is part of a wider array of reproductive health services. This approach to contraception stresses the importance of providing family planning services within a broad context of total sexual and reproductive health (Sai 1997). Seven years after the Cairo conference, the debate about how to implement this approach continues. The question is crucial and requires immediate answers if the new concept is to be translated into working programs.

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In this study, one model of a client-centered approach to family planning is described as a possible answer to the Cairo question. This model is currently being implemented in ten municipalities of Davao del Norte and Compostela Valley provinces in the Philippines. Its implementation requires a shift in the focus and objective of family planning programs from fertility reduction to meeting the needs of individuals.

One way to carry out the client-centered approach is to provide clients and potential clients with better information that will empower them to prevent unintended pregnancy, prevent transmission of sexually transmitted infections, and cope with adverse social and family conditions related to these efforts.

The client-centered approach is consistent with the quality-of-care, reproductive rights, and consumer rights approaches of family planning service provision. Moreover, improvement in information exchange is likely to contribute to a better demographic outcome at the aggregate level. This hypothesis is based on the understanding that information provided to clients is usually deficient and that improving information exchange will

result in clients' selection of appropriate contraceptive methods and in higher continuity of method use.

Information Exchange

Situation analyses¹ conducted in more than 20 countries indicate that the information exchange between providers and clients is often poor or inadequate. Typically, clients are not asked about their reproductive intentions, not told about methods available at the facility, about how to use the method they select, or about the method's side effects² (see, for example, Mensch et al. 1994).

Evidence from a recent study conducted in Mexico (Ponce et al. 2000) suggests that providing potential contraceptive users with comprehensive information about family planning methods and risk factors for acquiring sexually transmitted infections (STIs) has a significant effect on their subsequent choice of a method. Moreover, some empirical data support the hypothesis that improving information results in a higher continuity of method use. A review of studies conducted in the 1980s suggests that an exchange of accurate contraceptive information results in higher method-use continuation (Piotrow and Meyer 1991). A follow-up study of contraceptive discontinuation in Niger and the Gambia showed that discontinuation was higher among women who reported that they had not been adequately counseled about their methods' side effects (Cotten et al. 1992). Similar findings have been reported in a Chinese study of acceptors of an injectable contraceptive. Members of the treatment group were given more information than were those in the control group, who were given the routine counseling (Lei et al. 1996), as a result of which the treatment-group respondents were four times more likely to continue with the method than were those in the control group. An unpublished Peruvian study also suggests that better information exchange results in higher continuity of use. In contrast to these findings, a multi-centered study conducted by the International Planned Parenthood Federation (IPPF) suggests that greater information exchange results in reduced continuation of the method selected (Huezo and Malhotra 1993).

Several of these studies may have had methodological problems. Data on information that clients received were collected retrospectively, and the effect of information exchange could be due, therefore, to selectivity. Women who were using the method at the time of the interview might have been more likely than others to remember what they had been told at the time of their last visit to a service facility. The effect of this kind of bias is unlikely to be eliminated completely through sta-

tistical controls. In studies such as the Chinese experiment, the results do not demonstrate clearly whether the differences between the two groups are entirely due to enhancement of information provision for the treatment group. Finally, a focus on first-method and first-segment continuation rates, as in the IPPF study, is likely to miss respondents who switched methods because they had received information about the possibility of doing so.³

A program that focuses on those who are already practicing contraception and attending to their needs may use a better strategy to achieve demographic effects. Evidence in support of this approach comes from simulation models and panel data gleaned from diverse settings (for example, from Peru, with a contraceptive prevalence of 70 percent and from Morocco, with a contraceptive prevalence of 50 percent). A simulation model showed that recruiting a small number of acceptors and taking good care of them is a better strategy for family planning programs than trying to recruit a large number of acceptors whose needs cannot be met (Jain 1989). A recent panel study conducted in Peru of 1,093 married women interviewed in 1991–92 and again in 1994 showed that about 20 percent of these women had had an unintended pregnancy between the two surveys (Jain 1999). The Peruvian family planning program could have focused on two strategies in 1991–92: (1) to help women with unmet need to initiate contraceptive use, and (2) to help women already using a method (that is, those without unmet need) to eliminate unintended pregnancies by providing accurate information on how to use their method, on the possibility of switching to another method, and on the source of contraceptive supplies. The overall proportion of women having an unintended pregnancy would have been reduced from 20 to 17 percent according to the first scenario and to 6 percent according to the second scenario. A similar point has also been made by Jain (1997) using data from a panel study of 1,682 Moroccan women interviewed in 1992 and 1995: 16 percent of these women had an unwanted birth between surveys, but the proportion would have been 11 percent had the first strategy been employed and 8 percent had the second strategy been used (see Westoff and Bankole [1998] for the original source).

Defining a Client-centered Approach

One way to implement a client-centered approach is to provide clients and potential clients with comprehensive information that will empower them to regulate their fertility in a healthful manner. To do this, family planning programs have to pay attention to the content

of the information provided to individuals through various channels, including what they receive from the family planning provider. Sometimes, the word “counseling” is used to describe this encounter. Here, the phrase “information exchange” is used instead because counseling may be interpreted to mean a one-way communication from provider to client, and it may suggest that the provider is in control of the encounter. Information exchange, on the other hand, refers to a two-way communication process that can empower women (clients) to share control of the process of making choices appropriate to their own needs and circumstances. A review of client–provider interactions (Murphy and Steele 1997) highlights the key processes by which the contact between the provider and client becomes meaningful.

The implementation of a client-centered approach requires that providers’ and programs’ orientation shift from method to client; that information be elicited from clients in order to understand their needs and circumstances; that clients be involved in the selection of a contraceptive method; and that appropriate and accurate information be provided to clients about the methods they select.

In many instances, client–provider interactions are structured so as to impose providers’ views on clients in order to motivate clients to cease or limit childbearing, and methods are, therefore, described without giving adequate attention to clients’ needs. A client-centered approach implies a shift in this orientation from promoting a particular method to promoting the well-being of the client. To work toward this goal, a provider must elicit certain basic information about the client’s situation, for example, her reproductive intentions, contraceptive experience, and family circumstances, in order to help her select an appropriate method.

Insofar as is possible, the client should select or at least be involved in selecting the method that suits her needs. The provider should continue to play an important role in the client’s choice by ensuring that the method selected is medically appropriate and by ascertaining that the client has adequate information for at least two methods so that she can choose one that suits her best. The discussion of at least one other alternative is particularly important when a permanent or long-acting method is under consideration.

Some debate has arisen about what is adequate information, that is, when does information about methods become too much for the client to handle.⁴ Although the definition of the word “adequate” is problematic, in a client-centered approach, providers should give clients general information about contraindications⁵ for the contraceptive methods available, specific information about

the method selected (including its side effects and its level of protection against transmission of disease), and about the possibility of changing the methods and source of supply if necessary.

General information about contraindications could include items such as the inappropriateness of sterilization for those who want more children or for those who may not be sure if they do; the points that hormonal methods containing estrogen are not recommended for women who are breastfeeding and that IUDs are not recommended for those who may have more than one sex partner or for those who suspect that their partner may have other partners.

Providers should give clients information about how to use the method selected; its common side effects and what to do about them; where to seek assistance if a serious problem arises from use of the method; the level and duration of the method’s effectiveness in preventing pregnancy; follow-up requirements, including when to come back for a checkup; what to do in case of method failure; whether the method prevents transmission of STIs; and potential effects of the method selected on daily life. The increased bleeding associated with a method, for example, may affect a client’s daily routine and sexual activities. If so, the provider and the client need to discuss ways to cope with this problem. The client should have the option of bringing her partner to the provider for consultation.

Regardless of the client’s role in the initial selection of the method, the provider must assure her that she can always switch to another method if the one she chooses turns out to be unhealthful, inconvenient, or not suitable to her needs and circumstances. The provider can tell her client:

A particular method is not suitable to all women and may not remain suitable to the same woman over time. You are starting with this method, and if you find that it does not fit your needs, come back and we will provide you with another method. We will do so until we find a method that works for you.

The client should also receive information about other service facilities available in or near her community (for example, a pharmacy, a nongovernmental clinic, or a private doctor) where the woman can go either to renew supplies of the method selected or to switch to another method. She should be encouraged to feel that she is in control of her situation and that she does not have to return to the same source or the same provider for her contraceptives.

The Davao Project

The Population Council in the Philippines conducted a series of operations research (OR) workshops in 1996 to bring together researchers and program managers from selected areas of the country for an appreciation of OR as a tool for program management. In one of these workshops, the provincial health officer of Davao del Norte noted that a major weakness in the family planning program was the lack of counseling. This inadequacy had several apparent causes: the lack of private rooms in the clinics that could be used for client counseling, high clinic caseloads, and the service providers' dearth of counseling skills. This situation was linked to the high discontinuation of contraceptive use that characterizes the family planning program in the Philippines. A client-centered approach was developed in response to this perceived need and was implemented and tested in the Davao del Norte and Compostela Valley Provinces. Until 1998, both provinces were part of the Davao del Norte province, a predominantly agricultural area with a population of about 1.2 million people in the Southern Mindanao region (Region XI).

The Study

The municipalities in the Davao province were sorted into ten pairs that were matched on such criteria as geographic location, level of urbanization, and client–health worker ratio. Tagum and one other municipality were excluded because their relatively greater development and urbanization made them difficult to match. One municipality from each pair was randomly assigned to the experimental group and the other to the control group. One rural health unit and the three nearest *barangay* health stations from each municipality were included in the study, for a total 40 service-delivery points (SDP) in each group, respectively.⁶ Thus, the research design is quasi-experimental.

Service providers at the experimental-group clinics were trained according to the program below. Measurements of specific aspects of providers' knowledge and behavior were taken of all study providers in both the experimental and the control groups. A panel of family planning clients was recruited from the study clinics and, therefore, panel respondents who visited clinics in the experimental group would have been exposed to providers who had received the project training, whereas those who attended clinics in the control group would not.

The use of random allotment increases the likelihood that the experimental and control groups are similar be-

fore the intervention and that any differences found subsequently between the two groups can be attributed to the intervention. The incorporation of a control group allows the effect of the intervention on clients in the experimental group to be measured.

The Intervention

The two components of the intervention were: (1) training of family planning service providers in fixed clinics in information exchange and (2) training of supervisors in fixed clinics in facilitative supervision, described below.

An informal needs assessment was undertaken consisting of interviews with key stakeholders including program managers and service providers, to identify strengths and weaknesses in service delivery, especially in the area of information exchange. Discussions with various institutions and organizations, including AVSC International,⁷ were held. A member of this study's research team also took part in a ten-day training on counseling organized by AVSC International in Cebu City.

During the conceptual stage of the project, its proponents saw the need to integrate a gender perspective, because research findings have indicated that issues surrounding contraception and pregnancy are linked to power relations between husbands and wives. The project's designers felt that service providers working in the public sector needed to be sensitized to these issues. A leading local women's health advocate in Davao was chosen to serve as a consultant on gender. After her own training course in Cebu City was completed, she became part of the project team and helped as a trainer. Gender sensitivity was consciously introduced in the discussions, examples, and strategies of counseling. Male responsibility in reproduction was addressed in the context of family planning and reproductive health.

Training of Providers

A five-day training program for the service providers from the experimental areas was conducted in March 1997 by AVSC International using the GATHER approach.⁸ It was attended by eight doctors, 11 nurses, and 38 midwives from ten rural health units and 30 *barangay* health stations from the ten municipalities. Three refresher courses were conducted from 3 to 6 February 1998, 19–20 November 1998, and on 6 September 1999 to enhance the knowledge, skills, and attitudes of midwives, because they are the main providers who come in direct contact with the clients.

The service providers were trained in information exchange so that they could listen to their clients and

respond with relevant, accurate, and complete information (AVSC International 1995; AVSC International and DOH, Philippines). Specifically, their training stressed imparting information on the following topics: alternative contraceptive methods; procedures for switching to another method; other sources of contraceptive supplies; procedure for using the method selected; possible side effects of the method selected; what to do if a problem arises; the duration and effectiveness of the method selected in preventing pregnancy; and follow-up and re-supply visits.

During the training, particular emphasis was placed on the development of verbal and nonverbal communication skills for asking relevant questions and explaining technical information in simple language that clients could understand. Considerable emphasis was also placed on redefining the role of service providers. They were encouraged to take a less directive approach with clients and to assume a supportive stance toward each client's individual decisionmaking ability. The format of the training included both didactic and role-playing elements.

The refresher courses evolved from the idea that one-shot training would be inadequate for enhancing providers' knowledge, skills, and attitudes. Aside from field monitoring and follow-up, health providers need time for discussing their difficulties and experiences. The first refresher course, based on results from the situation analysis and field monitoring, indicated the need to review providers' knowledge of counseling techniques and contraceptive technology.

The second refresher training was aimed at improving providers' attitudes toward clients and counseling and at developing doctors,' nurses,' and supervisors' abilities as trainers. The topics covered included preliminary results, a review of the GATHER approach, reproductive rights, clarification of values concerning sexuality and fertility, a review of gender bias, clients' right to information, confidentiality, continuity of services, reproductive choice, and privacy. It was conducted by the women's health advocate and other gender advocates.

The third refresher course, held ten months after the second, was a one-day event for nurses and midwives. Almost all of the original providers from the experimental areas attended the course. Two trainers from the Department of Health facilitated these courses. The training consisted of a review of the client-centered approach to family planning and contraceptive technology. The results of the situation analyses were presented and discussed by the group. An important feature of the course was the discussion of contraceptive side effects and warning signs. The providers shared their difficulties in providing family planning services, especially when

problems or complications arise. They discussed potential means of coping with problems, in particular the necessary development of a referral system in the province.

Training in Supportive Supervision

The second component of the intervention involved training supervisors in the aims of the intervention so as to ensure its smooth implementation. They were trained in facilitative supervision, an approach emphasizing mentoring, joint problem-solving, and two-way communication (Ben Salem and Beattie 1996). The purpose of the training was to help supervisors undertake tasks beyond routine supply inquiries, record checking, and reviewing the achievement of targets. Supervisors can create an enabling environment for providers by ensuring that their work-related problems are resolved.

The training provided a brief review of the GATHER approach and of contraceptive technologies. All supervisors from clinics in the experimental areas underwent the training, as did 17 other supervisors (doctors and nurses) from the provincial office. They were asked to process the results of the exercises and to share their insights so as to increase their awareness of the importance of providing high-quality care. Working first individually and then in groups, the participants enumerated and examined the responsibilities of a supervisor. Selected case studies were used as models of how supervision should (or should not) be conducted (see Lacuesta et al. 1998 for details). In the training sessions, supervisors were given a checklist to use for the GATHER approach while monitoring the clinics' counseling activities. This tool incorporates information about the location of facilities, privacy and cleanliness of the health centers, contraceptive supplies, and availability of the record-keeping system and follow-up of the GATHER approach.

Methodology

In this study, data are presented from two situation analyses and a survey of new users. As part of the situation analyses, information was collected from nurses and midwives working in the study clinics concerning their training and knowledge and the practices they followed in service delivery. Providers were asked to give detailed information about their knowledge of specific contraceptives, including how they work, side-effects and warning signs.⁹ The first situation analysis was conducted in February and March 1997 (prior to the intervention) and the second in July and August 1997 (after the intervention had been implemented). Thirteen nurses and 76

midwives were interviewed in the first situation analysis and 18 nurses and 73 midwives in the second.

The second data source is interviews with a panel of new users of family planning services. New contraceptive users who had sought services at the study sites were enrolled in the study, and the first round of panel data was collected through interviews at home within six months of their clinic visit. For the purpose of this study, a new user is defined as one who had never used a modern contraceptive method prior to her visit to the clinic, or who had switched to another modern contraceptive method, or who had switched from another clinic for contraceptive services. Thus, women who came to the clinic for resupply or for a regular checkup were not included in the panel, because they were not exposed to the intervention and, therefore, did not receive additional information.

In all, 1,728 new users—869 from the clinics in the intervention municipalities and 859 from the clinics in the control municipalities—who had visited the service facilities between April 1997 and December 1997 were interviewed between September 1997 and January 1998 at home. The recall period for most of them was less than six months after they received services from the clinics. In addition to being asked to provide background information, they were specifically queried about the service quality they received during their visits to the service facility, whether their needs were assessed, and whether they were provided with a choice of methods, given information, and treated well.

Analysis

Data from the situation analyses are used here to demonstrate the effect of the intervention¹⁰ on providers' knowledge, whereas data from the first round of the panel survey are used to reflect their behavior toward clients. The effect of the intervention is gauged by differences between the experimental and control groups; group membership is measured by a dichotomous variable with the experimental group coded as one and the control group as zero. Method-specific knowledge of providers is gauged from their responses to questions about oral and injectable contraceptives and the IUD. For each of these methods, knowledge is grouped into three categories: basic knowledge about the method, its common side effects, and warning signs; furthermore, each of these three categories is comprised of a number of dichotomous elements. Midwives are the unit of analysis as they are the primary family planning service providers. Sixty-four midwives were interviewed in both rounds of the situation analysis, and a paired analysis of their

knowledge is presented. The effect of the intervention on knowledge is ascertained in two steps. First, in the experimental group, providers' knowledge after training is compared with the postintervention scores of those in the control group. This procedure does not take into account changes in scores that may have occurred among providers in the control group, however. Hence, logistic regression models that predict the effect of the training on postintervention knowledge after controlling for the preintervention knowledge are fitted.

We can gauge whether the training had any effect on providers' behavior in terms of the quality of care they offer and the care that clients perceive that they were given as reported by the panel respondents.¹¹ Five different aspects of quality of care were considered, as specified in the Bruce framework (1990): whether client's needs were assessed; whether they were presented with a choice of contraceptive methods; whether they received necessary information about the method they selected; whether they were told when to return to the clinic; and whether they were treated well. Each aspect is represented by an index composed of several elements to encompass the various dimensions of that aspect. For example, assessment of a client's need is composed of three elements: whether she was asked if she wanted another child, and if so, her preferred timing of the next child's birth; and her previous family planning experience. The index of choice is based on her response concerning the type of method she preferred, on her being told about other methods but not having a particular method promoted, and on her receiving her method of choice. The index of information clients received is composed of seven elements ranging from how the method works, its side effects, and how to manage problems arising from its use, to its ability to protect against STDs. The index of interpersonal relations is also composed of seven elements ranging from whether the client is permitted to ask questions and her perception of the privacy of her interaction with the provider, to the provider's use of information, education, and communication (IEC) materials. Finally, the index of continuity of services is based on three elements: whether the client was told when to return for a follow-up visit, whether she was given an appointment card, and whether she was told of other sources of supply.

As in the analysis of the effect of training, that of the effect of the intervention on quality of care received is presented in two steps. First, a test for statistically significant differences in care received between the two groups is performed. Then we test if the differences, if any, still hold in a multivariate analysis that includes a range of respondents' characteristics. Logistic models are fitted when

the dependent variable is dichotomous, and ordinary least squares models are fitted when it is continuous.

Results

Effect of Training on Providers' Knowledge

In general, according to the situation analyses, providers from both the experimental and control areas had similar scores prior to the intervention in all three aspects of knowledge—basic knowledge, side effects, and warning signs—implying that the randomization worked. Moreover, basic knowledge about each method was found to be almost universal in both areas. Providers in both areas are less knowledgeable about common side effects of these methods, and their scores are poorest concerning knowledge about warning signs. Although no appreciable change was found between the two situation analyses in the knowledge of providers from the control municipalities, the knowledge of providers from the experimental municipalities concerning common side effects and warning signs improved after the training for all three methods considered.

The average score for number of side effects and warning signs known for oral contraceptives among the providers from the experimental municipalities increased significantly from 3.0 to 5.6, compared with an increase from 2.9 to 3.4 among the providers from the control municipalities (see Table 1). Similar results were noted in the scores for knowledge of IUD side effects and warning signs: A significant increase occurred from 2.7 to 4.0 in the experimental group with no change in the control group, as shown in Table 2.

Most of the increase in providers' knowledge is attributable to an increase in their knowledge about warning signs. For example, knowledge about severe leg pain as a warning sign for oral contraceptive use increased from 7 percent before the training to 67 percent after the training, and knowledge of possible infection from IUD insertion increased from 7 percent to 43 percent. Although the intervention has improved the providers' knowledge, their awareness of common side effects and warning signs still needs enhancement. Even after training, providers in the experimental group were able to list fewer than half of the side effects—two of four for the pill; one of three for the IUD, and two of five for injectables (see Table 3). Moreover, the training does not seem to have been effective in increasing providers' recognition of all warning signs; for example, it did not appear to increase their awareness that signs of pregnancy may indicate a client's need for seeking care when she is using an IUD or injectables.

Table 1 Percentage of midwives surveyed, by their knowledge of oral contraceptives, and effect of the intervention, the Davao Project, Philippines, 1997

| Item | Situation analysis 1 | | Situation analysis 2 | | Effect of the intervention ^b | |
|--|----------------------|---------------|----------------------|---------------|---|----------------|
| | Experimental group | Control group | Experimental group | Control group | Exponentiated β | Standard error |
| Basic knowledge | | | | | | |
| When to start using | 73 | 91 | 87 | 97 | 0.2 | 1.2 |
| How often to take | 100 | 100 | 100 | 100 | — ^c | — ^c |
| What to do if one pill is missed | 100 | 100 | 100 | 97 | — ^c | — ^c |
| Pills do not protect against STDs | 97 | 94 | 100 | 97 | — ^c | — ^c |
| Common side effects^a | | | | | | |
| Nausea | 80 | 59 | 63 | 62 | 1.1 | 0.5 |
| Mild headache | 83 | 85 | 80 | 94 | 0.2 | 0.9 |
| Spotting | 23 | 18 | 20 | 18 | 1.1 | 0.6 |
| Weight gain | 13 | 9 | 43 | 18 | 3.8* | 0.6 |
| Warning signs^a | | | | | | |
| Chest pain | 20 | 41 | 70 | 32 | 8.8* | 0.7 |
| Severe headache | 53 | 43 | 87 | 56 | 5.1** | 0.6 |
| Vision loss or blurring | 17 | 12 | 67 | 29 | 5.2** | 0.6 |
| Severe abdominal pain | 17 | 9 | 57 | 18 | 6.2** | 0.6 |
| Severe leg pain | 7 | 9 | 67 | 18 | 9.4** | 0.6 |
| Average number of side effects known per provider (unprompted) of four | | | | | | |
| | 2.0 (0.6) | 1.7 (0.8) | 2.1 (1.0) | 1.9 (0.8) | 0.1 ^d | (0.2) |
| Average number of warning signs known per provider (unprompted) of five | | | | | | |
| | 1.0 (1.0) | 1.2 (0.9) | 3.5 (1.8) | 1.5 (1.2) | 1.9** ^d | (0.4) |
| Providers [N] | [30] | [34] | [30] | [34] | | |

* Significant at $p \leq 0.05$; ** $p \leq 0.01$.

Note: Standard deviations are given in parentheses.

^a Questions about side effects and warning signs were phrased for spontaneous responses. Multiple responses were possible. ^b Adjusted effect of the intervention on knowledge after controlling for score received in situation analysis 1. ^c No coefficients are presented when no or little variation occurs with the item studied. Logistic regression models were fitted for each item on basic knowledge, side effects, and warning signs, whereas ordinary least squares models were fitted for the number of side effects and warning signs known. ^d Figures are regression coefficients from ordinary least squares models.

Source: Interviews with providers: Situation analysis 1, February–March, 1997; situation analysis 2, July–August, 1997.

The format of the questions could have some effect on the measurements. Midwives' responses concerning side effects and warning signs were unprompted, and all those mentioned were recorded. If a side effect or warning sign was not recorded, therefore, this omission might signify a lack of recall rather than a lack of knowledge.

The Effect of Training on Providers' Behavior

Table 4 indicates that women from the experimental and control groups are comparable in terms of several important demographic and social characteristics. For example, women from both the experimental and control areas have a little more than eight years of schooling, are about 28 years old, and have three living children. Sixty-

Table 2 Percentage of midwives surveyed, by their knowledge of the intrauterine device (IUD), the Davao Project, Philippines, 1997

| Item | Situation analysis 1 | | Situation analysis 2 | | Effect of the intervention ^b | |
|--|----------------------|---------------|----------------------|---------------|---|----------------|
| | Experimental group | Control group | Experimental group | Control group | Exponentiated β | Standard error |
| Basic knowledge | | | | | | |
| Insertion time | 97 | 100 | 90 | 100 | 0.0 | 46.4 |
| How to determine that IUD is in place | 97 | 100 | 93 | 100 | — ^c | — ^c |
| Timing of follow-up | 13 | 9 | 7 | 6 | 1.1 | 1.0 |
| IUDs do not protect against STDs | 97 | 97 | 97 | 97 | 0.9 | 1.4 |
| Common side effects ^a | | | | | | |
| Cramps | 40 | 32 | 50 | 29 | 2.4 | 0.5 |
| Heavy period | 47 | 32 | 47 | 47 | 1.0 | 0.5 |
| Backache | 23 | 32 | 10 | 15 | 0.7 | 0.8 |
| Warning signs ^a | | | | | | |
| Heavy discharge | 47 | 47 | 53 | 41 | 1.6 | 0.5 |
| Expulsion of IUD | 37 | 44 | 63 | 50 | 1.8 | 0.6 |
| Severe abdominal pain | 37 | 59 | 67 | 47 | 2.3 | 0.5 |
| Pain during intercourse | 23 | 12 | 17 | 12 | 1.8 | 0.7 |
| Infection (PID) | 7 | 9 | 43 | 18 | 3.7* | 0.6 |
| A late period | 3 | 6 | 10 | 3 | 3.6 | 1.2 |
| Pregnancy or signs of it | 13 | 6 | 37 | 6 | 9.7** | 0.9 |
| Average number of side effects known per provider (unprompted) of three | | | | | | |
| | 1.1 (0.7) | 1.0 (0.8) | 1.1 (0.9) | 0.9 (0.8) | 0.2 ^d | (0.2) |
| Average number of warning signs known per provider (unprompted) of seven | | | | | | |
| | 1.6 (1.0) | 1.7 (1.1) | 2.9** (1.5) | 1.8** (1.1) | 1.1*** ^d | (0.3) |
| Providers [N] | [30] | [34] | [30] | [34] | | |

* Significant at $p \leq 0.05$; ** $p \leq 0.01$. PID = Pelvic inflammatory disease.
Note: Standard deviations are given in parentheses.
^a Questions about side effects and warning signs were phrased for spontaneous responses. Multiple responses were possible. ^b Adjusted effect of the intervention on knowledge after controlling for score received in situation analysis 1. ^c No coefficients are presented when no or little variation occurs with the item studied. Logistic regression models were fitted for each item on basic knowledge, side effects, and warning signs, whereas ordinary least squares models were fitted for the number of side effects and warning signs known. ^d Figures are regression coefficients from ordinary least squares models.
Source: Interviews with providers: Situation analysis 1, February–March, 1997; situation analysis 2, July–August, 1997.

three percent of women from the experimental areas in comparison with 67 percent from the control areas want no additional child. About two-fifths of the women in both areas are first-time contraceptive users and 40 percent chose to use oral contraceptives. A few exceptions are found: A slightly higher proportion of women in experimental areas own more consumer durables, work, and use injectables. These findings mean that the process of randomization worked to a large extent, and hence, any observed difference in quality of care between the two groups may be attributable to the intervention.

Tables 5 to 9 present different aspects of the care received by the respondents. Each table presents two vertical panels. The first shows the care received as reported

by respondents in the experimental and control groups and the second shows the adjusted effect of the care received by the experimental group after controlling for the set of background characteristics described.¹²

In general, the unadjusted analyses show that respondents who had used the experimental clinics reported receiving significantly better care than those who visited the control clinics; furthermore, the adjusted analyses indicate that these differences persist for most of the variables studied. Respondents in the experimental group were statistically significantly more likely to report being asked about their reproductive intentions (73 percent versus 59 percent; $p \leq 0.01$), about their preferred timing of their next birth (90 percent versus 85 percent; $p \leq 0.01$), and about their previous family planning experience (89 percent versus 84 percent; $p \leq 0.01$). Although the two groups are similar on two of the three

Table 3 Percentage of midwives surveyed, by their knowledge of injectable contraceptives, the Davao Project, Philippines, 1997

| Item | Situation analysis 1 | | Situation analysis 2 | | Effect of the intervention ^b | |
|--|----------------------|---------------|----------------------|---------------|---|----------------|
| | Experimental group | Control group | Experimental group | Control group | Exponentiated β | Standard error |
| Basic knowledge | | | | | | |
| When to start using method | 100 | 97 | 93 | 82 | 3.1 | 0.9 |
| Timing of follow-up | 100 | 100 | 83 | 97 | 0.1 | 1.1 |
| Injectable does not protect against STDs | 97 | 94 | 100 | 97 | — ^c | — ^c |
| Common side effects ^a | | | | | | |
| Delayed fertility | 7 | 6 | 13 | 6 | 2.7 | 1.0 |
| Mild headaches | 57 | 56 | 47 | 38 | 1.4 | 0.5 |
| Spotting | 77 | 74 | 50 | 71 | 0.3* | 0.6 |
| Weight gain | 23 | 27 | 47 | 29 | 2.6 | 0.6 |
| Amenorrhea | 47 | 47 | 60 | 56 | 1.2 | 0.5 |
| Warning signs ^a | | | | | | |
| Heavy bleeding | 70 | 56 | 83 | 68 | 2.2 | 0.6 |
| Pregnancy or signs of it | 0 | 6 | 23 | 0 | — ^c | — ^c |
| Average number of side effects known per provider (unprompted) of five | | | | | | |
| | 2.1 (0.8) | 2.1 (1.0) | 2.2 (1.0) | 2.0 (0.7) | 0.2 ^d | (0.2) |
| Average number of warning signs known per provider (unprompted) of two | | | | | | |
| | 0.7 (0.5) | 0.6 (0.5) | 1.1** (0.5) | 0.7** (0.5) | 0.4*** ^d | (0.1) |
| Providers [N] | [30] | [34] | [30] | [34] | | |

* Significant at $p \leq 0.05$; ** $p \leq 0.01$.
Note: Standard deviations are given in parentheses.
^a Questions about side effects and warning signs were phrased for spontaneous responses. Multiple responses were possible. ^b Adjusted effect of the intervention on knowledge after controlling for score received in situation analysis 1. ^c No coefficients are presented when no or little variation occurs with the item studied. Logistic regression models were fitted for each item on basic knowledge, side effects, and warning signs, whereas ordinary least squares models were fitted for the number of side effects and warning signs known. ^d Figures are regression coefficients from ordinary least squares models.
Source: Interviews with providers: Situation analysis 1, February–March, 1997; situation analysis 2, July–August, 1997.

Table 4 Economic and demographic characteristics of study participants, by sample category, the Davao Project, Philippines, 1997

| Characteristic | Experimental group (N = 869) | Control group (N = 859) |
|--|---------------------------------|----------------------------|
| Economic | | |
| Respondent's education (mean years) | 8.6 (4.1) | 8.5 (4.1) |
| Husband's education (mean years) | 8.3 (2.9) | 8.2 (3.0) |
| Ownership of consumer durables (mean number) | 2.12** (2.1) | 1.86 (1.9) |
| Respondent works (percent) | 19.0** | 13.0 |
| Husband works (percent) | 97.0 | 98.0 |
| Demographic | | |
| Respondent's age (mean years) | 28.4 (5.8) | 28.1 (6.3) |
| Husband's age (mean years) | 32.0 (6.9) | 31.7 (7.1) |
| Ever pregnant (percent) | 100.0 | 100.0 |
| Number of living children (mean) | 2.96 (1.8) | 2.95 (2.0) |
| Age of youngest child (mean years) | 1.7 (2.4) | 1.6 (2.2) |
| Reproductive intentions (percent) | | |
| Limit | 63.0 | 67.0 |
| Space | 37.0 | 33.0 |
| Contraceptive use (percent) | | |
| New to the method | 40.0 | 41.0 |
| New to the program | 47.0 | 51.0 |
| New to the center | 13.0** | 8.0 |
| Method | | |
| Pill | 37.0 | 41.0 |
| IUD | 13.0 | 15.0 |
| Injectable | 41.0** | 30.0 |
| Condom | 9.0** | 12.0 |

** Significant at p£0.01.

Note: The economic index is based on ownership of ten consumer durables: refrigerator, television, radio, electric fan, stove, camera, sewing machine, electric iron, sofa, and mattress. Standard deviations are given in parentheses.

Source: First round, survey of new users.

elements, 66 percent of the women who went to the experimental clinics reported being asked all three of these questions, compared with 52 percent in the control group.¹³ Furthermore, these observed differences between the two groups persist after controlling for several potential confounders.

Women visiting experimental clinics, however, received nearly similar choices as those who visited control clinics (see Table 6). In terms of the information that clients reported receiving, a distinctive difference is discernible between the two groups, with those in the experimental group faring significantly better (as shown in Table 7). Information may be presented by the provider, but the client may not understand and internalize it because of information overload or various other factors, including the way the information is offered. This possibility is considered here by analyzing clients' reports of the information they were given. Significantly

greater proportions of respondents in the experimental group reported that the provider explained how the method worked (89 percent versus 76 percent; p£0.01), told about its side effects (83 percent versus 62 percent; p£0.01), told about managing problems that arise from its use (85 percent versus 66 percent; p£0.01), gave the warning signs of the method (80 percent versus 56 percent; p£0.01), and told about methods that protect against

Table 5 Percentage of study participants, by their responses concerning the quality of care they received, according to sample category, and adjusted effect of care experimental group received, the Davao Project, Philippines, 1997

| Assessment of client's family planning needs | Experimental group | Control group | Effect of the intervention ^b | |
|--|--------------------|---------------|---|----------------|
| | | | Exponentiated β | Standard error |
| Respondent was asked | | | | |
| If she desired another child | 73** | 59 | 1.9** | 0.1 |
| Timing preferred for her next birth ^a | 90** | 85 | 2.4** | 0.2 |
| Previous family planning experience | 89** | 84 | 1.5* | 0.2 |
| Client's needs were fully assessed | 66** | 52 | 1.8** | 0.1 |
| (N) | (869) | (859) | (1,728) | — |

* Significant at p£0.05; ** p£0.01. — = Not applicable.

Note: Logistic regression models were fitted for each item listed.

^a Item 2 was asked only of those who wanted an additional child; those who did not want an additional child were automatically coded as having been asked the timing they preferred for their next birth. ^b Adjusted effect of intervention on care, controlling for all background variables in Table 4.

Source: First round, survey of new users.

Table 6 Percentage of study participants, by contraceptive choices they were given, according to sample category, the Davao Project, Philippines, 1997

| Choice | Experimental group | Control group | Effect of the intervention ^c | |
|--|--------------------|---------------|---|----------------|
| | | | Exponentiated β | Standard error |
| Respondent | | | | |
| Was asked type of family planning method she preferred | 95** | 91 | 1.6* | 0.2 |
| Was told about other methods | 64* | 68 | 0.9 | 0.1 |
| Received information without a single method being promoted ^a | 92* | 89 | 1.4* | 0.2 |
| Received chosen method ^b | 100* | 98 | 3.9* | 0.7 |
| Client was offered full choice | 54 | 54 | 1.0 | 0.1 |
| (N) | (869) | (859) | (1,728) | — |

* Significant at p£0.05; ** p£0.01. — = Not applicable.

Note: Logistic regression models were fitted for each item listed.

^a This question was asked only of clients who had been told of more than one method. Those who were told only of one method were coded as not having had one method promoted. ^b Women who were not given their chosen method because they were breastfeeding or suspected they were pregnant or because of medical contradictions were coded as having received the method of choice.

^c Adjusted effect of intervention on quality of care, controlling for all background variables in Table 4.

Source: First round, survey of new users.

Table 7 Percentage of study participants, by information they received, according to sample category, the Davao Project, Philippines, 1997

| Information clients received | Experimental group | Control group | Effect of the intervention ^b | |
|--|--------------------|---------------|---|----------------|
| | | | Exponentiated β | Standard error |
| Respondent was given information about | | | | |
| How her chosen method works | 89** | 76 | 2.6** | 0.1 |
| How to use the method | 91 | 88 | 1.4* | 0.2 |
| Side effects of the method | 83** | 62 | 3.0** | 0.1 |
| How to manage problems that arise | 85** | 66 | 2.9** | 0.1 |
| Warning signs associated with method | 80** | 56 | 3.0** | 0.1 |
| Possibility of switching to another method | 85 | 85 | 1.0 | 0.1 |
| Methods that protect against STDs | 43** | 32 | 1.7** | 0.1 |
| Client received full information | 36** | 23 | 2.0** | 0.1 |
| (N) | (869) | (859) | (1,728) | — |

* Significant at p \leq 0.05; ** p \leq 0.01. — = Not applicable.

Note: Logistic regression models were fitted for each item listed.

^a Adjusted effect of intervention on quality of care, controlling for all background variables in Table 4.

Source: First round, survey of new users.

STDs (43 percent versus 32 percent; p \leq 0.01). That clients were informed of side effects, warning signs, and how to manage problems as well is encouraging. Typically, providers often withhold information on all these points, specifically about side effects, lest the knowledge scare the client away from contraceptive use. Although those in the experimental group received comparatively more information, fewer than two-fifths of them received all seven pieces they were entitled to be given. Only about one-fifth of clients in the control group received all seven.

Although the indexes discussed above emphasize the informational nature of the client-provider interaction, the rapport created between the two people is best captured by the index of interpersonal relations (see Table 8). In the Philippines, the social norm is one of courtesy, so that responses to questions of satisfaction with the clinic visit, the friendliness of the provider, and the cleanliness of the facility¹⁴ are uniformly normative for the two groups. Variations are seen, however, on those elements for which the courtesy bias does not operate—on privacy being provided, questions being answered by the provider, and use of IEC materials. Overall, about two-fifths of respondents in the experimental group perceived a high level of interpersonal contact, compared with fewer than a third in the control group, at a 1 percent level of significance. In terms of the overall continuity of services, no significant difference was found between the experimental (10 percent) and control (10 percent) groups (as shown in Table 9). However, significant differences were found on two of the three items. Re-

Table 8 Percentage of study participants, by indicators of client-provider interpersonal relations, according to sample category, the Davao Project, Philippines, 1997

| Indicator (respondent's perception) | Experimental group | Control group | Effect of the intervention ^b | |
|--|--------------------|---------------|---|----------------|
| | | | Exponentiated β | Standard error |
| Respondent allowed to ask questions | 93** | 85 | 2.5** | 0.2 |
| Respondent's questions answered to her satisfaction ^a | 93** | 84 | 2.4** | 0.2 |
| Provider was friendly | 99 | 99 | 1.0 | 0.5 |
| Respondent felt her privacy was respected | 86** | 68 | 2.6** | 0.1 |
| Facility was clean | 99* | 97 | 1.7 | 0.4 |
| Respondent satisfied with service | 99 | 98 | 1.5 | 0.4 |
| Provider used IEC material | 52* | 47 | 1.2 | 0.1 |
| Client felt she was treated well | 42** | 30 | 1.6** | 0.1 |
| (N) | (869) | (859) | (1,728) | — |

* Significant at p \leq 0.05; ** p \leq 0.01. — = Not applicable.

Note: Logistic regression models were fitted for each item listed.

^a Those who were not allowed to ask questions are coded as not having their questions answered to their satisfaction, even though they skipped this question. ^b Adjusted effect of intervention on care, controlling for all background variables in Table 4.

Source: First round, survey of new users.

spondents in the experimental group were more likely to be told when to return than were those in the control group. They were less likely, however, to be told of other sources of supply. We surmise that providers in the experimental group perceive themselves to be providing high-quality services and, hence, see no reason to inform their clients of other sources.

Table 10 presents a summary of the five indicators of care presented here. The summary indicates that much room for improvement exists for all dimensions of quality of care, because all the indices are well below 100 percent. Women in the experimental group received better

Table 9 Percentage of study participants, by perception of continuity of family planning clinic services offered, according to sample category, the Davao Project, Philippines, 1997

| Service offered | Experimental group | Control group | Effect of the intervention ^b | |
|--|--------------------|---------------|---|----------------|
| | | | Exponentiated β | Standard error |
| Respondent was | | | | |
| Told timing of next visit | 93** | 88 | 1.7** | 0.2 |
| Told of other sources of supply | 23** | 33 | 0.6** | 0.1 |
| Given an appointment card for follow-up visit | 31 | 30 | 1.0 | 0.1 |
| Respondent felt she was well connected to services | 10 | 10 | 0.9 | 0.2 |
| (N) | (869) | (859) | (1,728) | — |

** Significant at p \leq 0.01. — = Not applicable.

Note: Logistic regression models were fitted for each item listed.

^a Adjusted effect of intervention on quality of care, controlling for all background variables in Table 4.

Source: First round, survey of new users.

Table 10 Summary of indicators of quality of care client received at family planning clinic, the Davao Project, Philippines, 1997

| Quality-of-care indicator | Experimental group | Control group | Effect of the intervention ^a (N = 1,728) | |
|--|--------------------|---------------|---|----------------|
| | | | Exponentiated β | Standard error |
| All clients' needs assessed | 66** | 52 | 1.8** | 0.1 |
| Client was offered full choice of methods | 54 | 54 | 1.0 | 0.1 |
| Client received full information | 36** | 23 | 2.0** | 0.1 |
| Client felt she was treated well | 42** | 30 | 1.6** | 0.1 |
| Client felt she was well connected to services | 10 | 10 | 0.9 | 0.2 |
| All of the above | 4 | 2 | 2.7** | 0.3 |

** Significant at $p \leq 0.01$.

Note: Logistic regression models were fitted for each item listed.

^a Adjusted effect of intervention on quality of care, controlling for all background variables in Table 4.

Source: First round, survey of new users.

care; however, one-third did not have all their needs assessed, half were not offered full choices available, two-thirds did not receive full information, three-fifths reported not being treated well, and nine-tenths were not well informed about follow-up services. Moreover, if total quality of care is considered as encompassing all of these different dimensions, less than 5 percent of clients in both groups reported receiving high-quality care, a finding that indicates a need for ongoing interventions.

Because the intervention was specifically focused on improving the quality of the client-provider exchange, the result indicating that providers are reportedly inquiring about their clients' needs and providing relevant information is important. The bivariate analysis indicated that differences occurred between experimental and control groups in the care they received. Moreover, that these differences persist in multivariate analyses adds greater support to the conclusion that the intervention altered the way services are provided. The intervention in this study appears to have been successful in its objectives: Providers not only increased their knowledge of contraception but also offered better quality of care to their clients.

Discussion

This report describes a field-tested model of client-oriented care that provides information about how family planning programs can be tailored to be responsive to the needs of the clients they are intended to serve. The clearest finding is that identifying service gaps, retraining providers, and use of clear protocols for engaging with clients can result in markedly improved client-provider interactions. The evidence presented suggests

that the needs and concerns of three different constituencies—clients, providers, and program managers—can be addressed by using such a model.

Training providers is clearly a feasible means for improving their knowledge of contraception and for improving information exchange with clients. Even providers with prior training in family planning methods demonstrated considerable gaps in their knowledge as well as misconceptions about contraceptives. Field visits confirmed that during the post-training period, interested providers were able to create an atmosphere conducive to communication with their clients. Some providers improvised and created private spaces for examination and counseling where none had existed previously by curtaining off portions of the space available. Others refrained from the general public counseling they were accustomed to giving and began private, one-on-one information exchange. Providers remarked to the research team that their clients were pleasantly surprised by the new treatment, which in turn gave the providers further encouragement. As the intervention progressed and the providers became more proficient, they were able to distinguish their earlier approach in which they had been making contraceptive choices for their clients from the new model in which the clients were making their own choices. This awareness increased the rapport between providers and clients, and the privacy of the interaction proved to facilitate greater communication as well. Some providers reported that a few clients now discuss sexual and gynecological problems during the counseling sessions, a major breakthrough. Such topics were not discussed in family planning encounters prior to the intervention.

Clients visiting the experimental clinics received a greater amount and more accurate family planning information than did those visiting the control clinics. Providers were able to offer a range of information pertaining to the proper use of the various methods, their side effects, and warning signs. Among the most encouraging and positive outcomes of the intervention has been the discussion of side effects during consultations. Situation analyses and observations of program managers and researchers have documented convincingly that providers usually do not discuss side effects with their clients (see Bongaarts and Bruce 1995; Miller et al. 1998). Typically, providers fear that frank discussion of methods' side effects will dissuade clients from using contraceptives. Moreover, no systematic guidelines for presenting this sort of information have been available to providers until recently. Lack of knowledge of side effects and health concerns are clients' most frequently cited reasons for their unwillingness to practice contraception and for their discontinuation of methods (see

Casterline et al. 2000). This intervention was able to encourage a clear and explicit discussion on this topic, an important result.

Other gaps in the information-exchange process should be highlighted; for example, information is not always provided to clients concerning which methods protect against HIV/STIs or about alternative sources of supply. If a family planning consultation is not used to inform individuals about these issues, a valuable opportunity to serve clients has been missed. Clearly, providers need encouragement and reinforcement to include this topic in their information exchange.

Efforts to establish this new model within the public sector have also been encouraging. Immediate supervisors were engaged in the process of adopting the model and provided valuable encouragement and support to those they supervise. Some administrative obstacles prevented supervisors from making the planned number of visits to clinics. Impediments included the lack of travel-allowance funds and vehicles. Supervisors found that filling out the supervisory checklists was time-consuming, and in fact, few used them. In the setting where this field test took place, administrative supervision of health personnel is the responsibility of an elected official—the mayor. Normally, the mayor’s office does not have the technical expertise for monitoring health-related matters. Moreover, the role of provincial health officials in relation to that of municipal health officials is unclear. Therefore, supervision is relatively weak, and financially disadvantaged local governments cannot afford to support supervisors’ visits. Despite such setbacks, the project’s objectives of engaging with supervisors and introducing them to a new model of service delivery and an altered role of supervision were achieved.

The project described here made clear the possibility of reorganizing service models and enhancing providers’ information-dispensing capabilities within the confines of existing resources: For example, training costs can be covered within the budgets for existing training programs. Quality-of-care improvement can be undertaken without recourse to additional staff, equipment, or large financial outlays.

Finally, the pilot provided the program managers and policymakers involved with sufficient information and experience to consider its replication. The Davao Project was started on a fairly large scale, covering the entire province, with only a few providers per municipality. The results impressed one program manager to the degree that he has installed it all over the province of Davao del Norte. Moreover, the Department of Health’s selection of this project as one of two “best practices” models considered nationally gives hope for a potential

scaling-up of the approach in other provinces throughout the country. This type of replication is possible because of the steps taken at the beginning of the project to build consensus with various stakeholders including the national and regional offices of the Department of Health, provincial governors, and mayors of municipalities. The challenge will be to sustain a commitment to continued improvements in quality of care. One possible strategy would be to reward providers rendering good care in such a way as to maintain momentum.

Notes

- 1 Situation analysis methodology involves visiting service facilities for a day and interviewing providers and clients who come to these facilities on that day. See Miller et al. (1997) for a fuller description of the methodology and data-collection questionnaires.
- 2 These deficiencies in information exchange are not the result of a gender gap between providers and clients, because in almost all circumstances, the providers are women. The deficiencies appear to be systemic, and they decrease clients’ ability to take charge of their own health and reproductive lives.
- 3 Switching is a positive outcome of clients’ being provided with information; an analysis of any method continuation would have resulted in higher continuation.
- 4 The review of client–provider interactions by Murphy and Steele (1997) stresses the importance of avoiding information overload.
- 5 The term “contraindications” as used here includes both medical and social conditions that preclude the use of the method being considered.
- 6 Public health services in the municipalities are arranged in two tiers: a rural health unit on top with several barangay health stations beneath it. The barangay is the smallest administrative unit.
- 7 AVSC International was renamed EngenderHealth in March 2001.
- 8 The word GATHER is a mnemonic device to help the service provider remember the six basic components of the family planning counseling process. These are: to greet (G) the client in a friendly and polite way; to ask (A) the client about her or his family planning needs; to tell (T) her or him about family planning methods; to help (H) her or him choose a method; to explain (E) how to use the chosen method correctly; and to plan with the client the date for her or his return (R) visit to the clinic. While there are differences in the emphasis on certain items, this approach comes very close to the client-centered approach described earlier in the paper.
- 9 A warning sign is a severe condition for which the contraceptive user should immediately seek medical attention.
- 10 The situation analyses measure the effect of the first training only and do not include the refresher trainings.
- 11 Observations of client–provider interactions and exit interviews conducted during situation analyses can also be used for this purpose. We found a considerable degree of random noise resulting from the small numbers of observations of new clients (16 and 7 in the experimental groups and 13 and 22 in the control groups) and exit interviews during the situation analyses. Therefore, these data are not included.

- 12 Because the respondents were interviewed after the intervention was implemented, no preintervention measures of their characteristics are controlled.
- 13 The index takes into account that only those who desire to space childbearing were asked about the preferred timing of the next child (see footnote for Table 5).
- 14 Indicating that the facility was not clean would bear negatively on clinic staff, which respondents are often reluctant to do.

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