
COMPARATIVE STUDIES 7

SERVICE AVAILABILITY

DIHS Demographic
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Surveys



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**Demographic and Health Surveys
Comparative Studies No. 7**

**The Availability of
Family Planning and
Maternal and Child
Health Services**

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Preface

An important part of the DHS program is the comparative analysis and further analysis of data obtained from DHS surveys. Standard recode files have been prepared for most surveys and researchers worldwide are encouraged to use the datasets for further analysis.

Much of the comparative analysis of DHS data, particularly for major topics such as fertility, mortality, contraceptive use, and maternal and child health, is being carried out by DHS staff in Columbia, Maryland. The results of these analyses are published in the *DHS Comparative Studies* series. A total of 17 *Comparative Studies* are planned.

The studies in this series are based on the standard recode files which were available in early 1990. These include datasets for 25 standard DHS surveys carried out from 1985 to 1989. Data for El Salvador, Ondo State (Nigeria), and Sudan may not be included in all reports because some of the El Salvador and Ondo State data are not comparable with data from other DHS surveys and the Sudan survey was not completed until mid-1990.

Reports in the *DHS Comparative Studies* series provide detailed tables and graphs comparing the results of DHS surveys for countries in sub-Saharan Africa, the Near East/North Africa, Asia, and Latin America/Caribbean. The reports also discuss various issues such as questionnaire comparability, survey procedures, and data quality. Where appropriate, data from previous survey programs, primarily the World Fertility Survey (WFS) and the Contraceptive Prevalence Surveys (CPS), are used to evaluate trends over time.

The *DHS Comparative Studies* series is intended to provide analysts and policymakers with readily available comparisons of data from developing countries. The studies will also be useful to others in the fields of international population and health.

During the second phase of the DHS program (1988-1993), data were collected for 22 countries. An update of the information on knowledge and use of contraception (including data from DHS-II countries) will be published later in the program.

In the third phase of the DHS program (1992-1997), surveys will be carried out in at least 20 countries.

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Project Director

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1 Introduction

The DHS service availability questionnaire was designed to measure the availability of family planning and health services in developing countries. The impetus for collecting service availability information was USAID's goal that, by the year 2000, 80 percent of couples in developing countries would have access to family planning services. Data from the 13 service availability surveys conducted during the first phase of the Demographic and Health Surveys program (DHS-I) can be used to evaluate progress toward achieving this goal.

The collection of service availability information has three main objectives. The first is to describe the family planning and maternal and child health (MCH) service environment in participating countries—that is, the types of outreach services present in the sampled communities (e.g., community-based distribution workers, family planning field workers, and mobile clinics) and the distance to static facilities providing family planning and health services. The second objective is to examine the relationship between service availability and the use of family planning and health services, on the assumption that making services more accessible increases the likelihood of use. Both objectives will be examined in this report. The third (and more recent) objective for collecting service availability data is to examine the quality of services offered by family planning and health providers. Since questions about service quality were only recently added to DHS service availability questionnaires (in 1991), this topic is not covered in this report.

In developing the service availability questionnaire, DHS staff utilized the experience of the World Fertility Survey (WFS) and Contraceptive Prevalence Surveys (CPS). After evaluating the two approaches to collecting service availability information, it was found that both WFS and CPS surveys primarily collected data reflecting *perceived* rather than *actual* availability of family planning and health services. Women were asked about their *awareness* of the existence of outlets providing contraceptive services and their *perceptions* about the accessibility of these outlets.¹ They were not asked about *actual* availability or accessibility.

The analysis of service availability data from the WFS and CPS surveys generally supported the assumption that the level of contraceptive use is positively associated with the level of knowledge of family planning services and inversely associated

¹ The World Fertility Survey obtained information on perceived travel time to providers and cost of methods for four modern methods (pill, IUD, condom, and female sterilization); the Contraceptive Prevalence Surveys collected information on perceived travel time, mode of transportation, convenience, opinion as to quality of services, and use of outlets from which respondents could obtain modern methods (see Jones, 1984 and Lewis and Novak, 1982). Measures of actual availability of services were obtained from community-level surveys in seven countries participating in the WFS program (Anderson and Cleland, 1984).

with perceived or actual travel time to family planning service providers. Since travel time is regarded as the primary indicator of access to family planning services, almost all of the studies investigating the relationship between contraceptive use and perceived availability relied on responses to questions in the individual questionnaire about travel time to an outlet providing contraceptives.

Assessments of these data revealed several methodological and conceptual problems with using respondent's perceptions of availability as proxies for actual community availability. The use of reported rather than actual travel time as the principal measure of availability was felt to be insufficient for purposes of program planning. In a discussion of the CPS approach, Lewis and Novak (1982) called for an investigation of the ways in which attitudinal bias influences perceptions of travel time; they recommended that information on actual distance and travel time be collected in future surveys. Anderson and Cleland (1984) advocated the use of community data—as more objective than individual responses—because of problems posed in the analysis of perceived availability measures for women who do not know a source. Chayovan, Hermalin, and Knodel (1984) argued that alternate measures of the *accessibility*² of family planning, such as the length of time services have been available and the cost, quality, and convenience of services, should be added to the more traditional travel time and/or distance measures.

These suggestions stemmed in part from concerns that the service availability information being collected from individuals was not sufficient for purposes of evaluating and modifying current programs. While "low" actual availability may signal a need for more outlets, "low" perceived availability may not. When perception differs from reality, a different intervention may be needed, such as an information and education campaign. Interest in community-level data pointed to the need for reliable, factual information. This need was acknowledged during the WFS and CPS surveys, which attempted to collect objective information about the availability of family planning services in community surveys conducted in conjunction with the main surveys.³

The DHS approach to collecting data on service availability has emphasized objective measures of the physical proximity of services, as well as information about community factors that may influence the use of services, such as the type of outreach services available.

² The authors distinguish *availability* from *accessibility*. Services either are/or are not available, whereas accessibility involves many variables and is a matter of degree.

³ In several countries, the World Fertility Survey used the community questionnaire to collect information about the availability of health services as well as family planning services.

Therefore, service availability data collection has been focused at the community level, rather than at the individual level. Only information on knowledge of family planning providers is drawn from the individual questionnaire; all other service availability data are collected by a special survey in the communities in which the sampled households are located.

As part of the first phase of the DHS program, service availability data were collected in 13 countries. In addition, an in-depth service availability survey (funded by the World Bank) was conducted in Zimbabwe a year after the main survey was completed. The data from three countries (El Salvador, Trinidad and Tobago, and Peru) are not included in this analysis. The El Salvador service availability survey was excluded because it was experimental. In Trinidad and Tobago, the questionnaires were sent directly to the family planning and health facilities; no information was collected from informants in the sampled areas, thus preventing analysis of the service availability data for women in the DHS sample.

As for the Peru service availability survey, the data cannot currently be matched to the individual women respondents. This report presents information on service availability from the remaining eleven countries: Burundi, Colombia, the Dominican Republic, Ecuador, Egypt, Guatemala, Thailand, Togo, Tunisia, Uganda, and Zimbabwe.

Section two of this report describes the DHS service availability questionnaire, examines variations in the way the questionnaire was implemented in different countries, and discusses problems regarding the service availability data. Section three presents community-level service availability information. Sections four and five examine the availability of family planning and health services. The service availability questionnaire is reproduced in Appendix A. There is a brief description of the 11 service availability surveys in Appendix B.

2 Methodology

2.1 DHS SERVICE AVAILABILITY SURVEY

Data collection for the DHS service availability surveys was carried out in two stages. First, interviews were conducted with "informed" residents (informants) in each sample segment or cluster. The objective was twofold: first, to obtain specific information about family planning and health outreach efforts in the community and, second, to identify the nearest of each of the major types of stationary family planning and health facilities. The recommended procedure was for interviewers to assemble a group of 3 or 4 knowledgeable residents, at least one of whom was a woman, and conduct a group interview to obtain the service availability information. In some countries/clusters, however, a different procedure was used: data were gathered by questioning a series of individuals until all the necessary information was obtained. The characteristics of informants (e.g., education, occupation, social position) varied greatly between countries and between sampling units in the same country.

In the second stage of data collection, interviewers visited the family planning and health facilities identified by informants and interviewed knowledgeable person(s) at each facility. Again, there was considerable variation in the characteristics of persons answering the questions.

Four types of information were collected from cluster informants during the service availability survey:

- 1) General information describing the cluster setting such as type of cluster (city/town, village, or countryside); type of village (nuclear or dispersed); number of inhabitants in the locality; type of main access road (paved, unpaved, no road); distance to the nearest locality with 20,000 or more inhabitants; and types of transportation used by cluster residents to get to the nearest locality of 20,000 or more inhabitants (bus, taxi, boat, train, none).
- 2) Information about community access to general services such as schools (primary, secondary, and higher); public and private institutions (post office, market, and cinema); and sanitation services (sewer system and garbage disposal).
- 3) Information on the types of family planning and health services available in the community through outreach programs (such as contraceptive distribution programs, family planning field workers, mobile clinics, traditional birth attendants, and trained midwives).
- 4) Information about which stationary facilities provide family planning and health services and about the distance

between the community and the nearest of each type of facility (hospital, health center, clinic, pharmacy, and private doctor).

The interviewers then visited the nearest of each type of facility (so long as it was located within 30 kilometers of the cluster) to collect additional information about every level of service delivery. Since staff and equipment varied depending on the complexity of the services offered, the information gathered varied according to the type of facility. Also, since the service delivery system is unique in each country, the questions were adapted to the country-specific situation.

Specific information collected at each type of health facility (except where inappropriate) included the hours and days it operated, the numbers of doctors and nurses working at the facility, the types of health services offered, and the year in which each service was first offered.⁴ The family planning facilities provided information on which methods were available, their cost, the year each method was first available, the numbers of doctors and nurses providing family planning services, and the days and hours the facility provided family planning. The model questionnaire used for the DHS-I service availability surveys is reproduced in Appendix A.

2.2 IMPLICATIONS OF DIFFERENT DATA COLLECTION STRATEGIES

There was considerable variation in the timing of the service availability survey, relative to the survey of individual women, and in the type of interviewers used. In two countries, the service availability survey was conducted before the individual survey by the same staff who were doing the household listing. In four countries, the survey was conducted concurrently with the individual survey using supervisors or other staff to collect the service availability information. In the other five countries, the service availability component was conducted after the main fieldwork for the individual survey, usually by a new group of interviewers. There are advantages and disadvantages to each of these timetables.

When the service availability survey is fielded before the main survey, there is typically a rush to complete the modification of the service availability questionnaire in order to have it ready by the time the listing operation begins.

⁴ During the second phase of the DHS program, the information collected at these facilities was substantially increased.

This is because, if a household listing is needed, it is an ideal time to collect the service availability information, since the sample segments must be visited anyway and there is usually room in the vehicles for one additional team member who can administer the service availability questionnaires. Further, when the service availability information is collected before the main survey, it can be published with the main survey results.

When the service availability survey is fielded at the same time as the main survey, there is a risk that it will suffer from the crush of other activities in the overall survey operation. Although DHS recommends that a separate group of trained interviewers collect the service availability information, often there is not enough room in the vehicles for an additional interviewer for that purpose, so the task falls to the team supervisor. This can be a problem because, when the supervisor is occupied with collecting service availability information, interviewers who need help cannot benefit from the supervisor's assistance; also, survey time may be lost if interviewers have to wait for the supervisor to return to the segment. An advantage to collecting the service availability information at the same time as the main fieldwork, however, is that it will be available for publication along with the main survey findings.

The major problem with conducting the service availability survey after the main fieldwork is finished is that the data are unlikely to be ready in time for inclusion in the survey report. Also, it may be difficult at this stage to build enthusiasm for an additional survey operation. If another survey operation (such as reinterviews) has already been planned, however, it is not difficult to incorporate the service availability survey into the operation.

It must be emphasized that the collection of service availability information is a major fieldwork operation, and there are potential problems with data collection no matter what point in time the survey is fielded. Appendix B presents information about the survey procedures used in each of the countries.

2.3 LIMITATIONS OF THE SERVICE AVAILABILITY SURVEY

There are several limitations to the methodology used in the DHS service availability survey that must be considered when analyzing and interpreting the data. These limitations arise from assumptions underlying the data collection strategy as well as from measurement problems.

GENERAL LIMITATIONS

The major theoretical limitation, especially for studying the relationship between availability and use of services, is the assumption that availability is defined by the *nearest* facility providing services. This is a consequence of the fact that cluster

informants were asked to identify only the *nearest* facility of each type. It was assumed that the nearest facility represented the service environment. This may be fairly accurate in areas where the choice of facilities is limited, but may not apply in areas such as cities, where women have a wider array of facilities from which to choose.⁵ The assumption that availability is limited to the nearest facility is further weakened by the fact that, in order to maintain anonymity, women may intentionally seek out family planning services that are more distant. Despite these limitations, *nearest* facility was chosen for use in the DHS service availability survey; to visit *all* the facilities within a radius of the cluster would have added greatly to the work load of interviewers.

A second limitation is that the service availability questionnaire does not collect information from the recipients of family planning and health services. Thus, there is no way of measuring client-provider interaction or *qualitative aspects* of service provision such as length of waiting time and convenience of services. Quality is defined in terms of the way individuals are treated by the system providing services (Jain, 1989). While research has shown that the quality of services may affect use (Bruce, 1990), it was not possible to collect this information using the DHS-I service availability questionnaire.

Third, the DHS service availability survey is tied to a population-based rather than a facility-based sample. DHS surveys are designed to produce unbiased samples of women of reproductive age, not unbiased samples of clusters or facilities. Thus, service availability data are not valid for purposes of reporting the number and percentage of facilities with certain characteristics. The DHS service availability sample is representative of facilities located near the sampled women, but may not be representative of all such facilities in that country. The population-based sample does permit the calculation of coverage estimates, which are difficult to obtain using other methodologies.

A fourth limitation, which pertains to the precision of estimates derived from the service availability data, is that the sampling errors for cluster samples (on which service availability estimates are based) are higher than those for random samples. Because of the enormous cost and logistical problems associated with selecting and locating a random sample of households in a country, the DHS survey utilizes cluster sampling, in which groups of households (called segments or clusters) are selected. Because there is a tendency for the households/women within the same cluster to be similar (intra-cluster correlation), the sampling errors associated with many variables are higher for cluster samples than for random samples of the same size.

⁵ In order to determine the degree of choice available to women, the Service Availability Questionnaire was modified in DHS-II. Cluster informants are now asked to identify the *total number* of facilities of each type located within a specific radius of the community.

For example, contraceptive use often varies less among women within the same cluster than it does between clusters. Since the service availability data were collected once for each cluster and are assumed to apply to all women in that cluster, there is no intra-cluster variability at all. This is analogous to a situation in which all the women in a cluster were either using or not using contraception and leads to much larger sampling errors. Typically, in DHS surveys, about 200 separate clusters of households are selected, giving about that number of independent data points (cases) for the service availability survey. Because the number of cases for service availability data is so limited, the data are subject to larger sampling errors than the data for individual women. Table 2.1 shows the number of clusters in which service availability information was collected for each survey; this ranged from 87 to 598.

Table 2.1 Number of service availability enumeration areas (clusters) by country

Country	Rural	Urban	Total
<u>SUB-SAHARAN AFRICA</u>			
Burundi	99	NA	99
Togo	87	NA	87
Uganda	140	NA	140
Zimbabwe	114	52	166
<u>NORTH AFRICA/ASIA</u>			
Egypt	120	NA	120
Thailand	208	NA	208
Tunisia	48	106	154
<u>LATIN AMERICA</u>			
Colombia	42	139	181
Dominican Rep.	231	367	598
Ecuador	75	120	195
Guatemala	116	NA	116

NA = Not applicable

LIMITATIONS IN USING CLUSTER AND FACILITY INFORMANTS

In addition to the conceptual and structural limitations to the data collection effort reviewed above, there are data problems stemming from the choice of respondents that need to be considered.

There are four main problems in using cluster informants: systematic bias, logistical constraints, uninformed informants, and informant error.

Systematic bias: The goal of the service availability survey, i.e., to collect objective measures of service availability, may not be realized because the information gathered at the cluster level is limited to the opinions of cluster informants. This systematic bias is most apparent in the measurements of time and distance

(to facilities) that are estimated by cluster respondents (and not verified by interviewers).⁶ These time and distance measures are not completely objective, but are the collective estimates of cluster respondents or estimates that the interviewer has arrived at after interviewing cluster respondents.

The issue of possible sampling bias raises questions about the validity of the information collected with the service availability questionnaire. Checks have been made in some countries to verify distance information. In Ecuador, an independent assessment of distance was carried out for a random subsample of ten clusters. Distance estimates obtained from the service availability questionnaire were compared with distance estimates obtained using a map (i.e., the distance to the nearest Ministry of Health facility). This assessment concluded that the data from the service availability survey were generally valid (Rosero-Bixby, 1989).

Another check on the validity of the service availability data was done in Zimbabwe, where the coverage of community-based distribution (CBD) workers, as estimated from the service availability survey, was much higher than expected. In this survey, the names of the CBD workers identified by informants were recorded on the questionnaires. The Zimbabwe National Family Planning Council (ZNFPC) checked the names and found that respondents had correctly identified the CBD workers ZNFPC had operating in the areas where the clusters were located. This suggests that information received from cluster respondents is fairly accurate.

A different type of problem occurs when time, rather than distance, is used to measure the proximity of facilities. When time is being measured, for example, the amount of time required to travel to a facility, there is no control for the mode of transportation used to reach the facility. Time could vary a great deal depending on the mode of transportation used (or how fast a person walks). As a result, time measurements are difficult to verify.

In order to evaluate the quality of the distance and time information reported by informants, an analysis was made of the distributions of distance and time to the nearest health center (representing a *near* facility) and the nearest hospital (representing a *far* facility) for all the countries except Egypt and Tunisia (data not shown). From these distributions, it was evident that in some countries, interviewers may have recorded a distance of *30 kilometers or more* in order to avoid visiting the facility, thus creating a systematic bias in the data. This occurred more often

⁶ Some distances are verified by interviewers in the second phase of the DHS project. However, it is not possible to verify *all* distances. It would be a difficult, time-consuming, and expensive procedure to return to the center of the segment between visits to facilities—perhaps located on different sides of the segment—in order to verify the information on distance.

for hospitals than for health centers and was found most frequently in Colombia and Ecuador.

Most of the countries showed erratic distance distributions, largely due to the small number of sample points for each country. Only in the Dominican Republic and Thailand (countries with large numbers of sample clusters) do the distributions appear to have a pattern.

When the time estimates were examined, the distributions showed heaping on digits with intervals of five. Overall, other than the fact that some countries have systematic bias in the data on reported distance and time, it is difficult to make observations about the quality of the service availability data without additional outside information.

Logistical constraints: The limited time available to interviewers to search out and interview "knowledgeable" cluster informants may result in the selection of less-than-knowledgeable respondents. Although interviewers were instructed about the types of cluster residents considered knowledgeable, time pressures might lead them to ask questions of anyone they could find easily.

Uninformed informants: Information obtained from informants in areas with low service utilization may be less accurate than information obtained from informants in areas of high service utilization. This is because cluster informants who have not used a facility will probably be less knowledgeable about the services provided there.

Informant error: Informants may unintentionally provide misinformation to the interviewer. For example, cluster respondents in sub-Saharan Africa often misidentify facilities. In rural areas, particularly, informants often call *all* family planning and health facilities "hospitals," making it difficult to accurately assess the service environment.

Data problems may also occur when interviewing facility informants. Responses to questions may reflect what is *supposed* to happen in the facility, rather than what *actually* happens. For example, when asked about the hours during which a certain service is provided, an informant may report the official number of hours that the service is supposed to be offered, rather than the actual number of hours during which the service really is available to patients. Thus, if limited hours discourage women from using contraceptives, that fact may not come out in the facility informants' reports. Further, because many facility employees believe that the service availability survey will be used to evaluate them or their facility, they may not cooperate in answering the questions, or, as some interviewers believed, they may lie in response to the questions.

Despite these limitations, the information collected using the service availability questionnaire can provide important information for policymakers and analysts that is difficult to obtain from other sources.

PROBLEMS WITH COMPARABILITY

A final issue of importance for this report is the problem of comparability of data between countries. The service availability questionnaire was modified to reflect the specific service environment in each country, to ensure that the information gathered would be meaningful and address important service delivery issues. As a result, much of the service availability data are not comparable across countries. Perhaps the most troublesome area for comparability during DHS-I was the definition of *locality*. Locality is defined in the instructions for the service availability questionnaire as "the place (city, town, village, etc.) in which the cluster is located. The name commonly used for this place denotes the locality. Locality is *not* to be interpreted as the neighborhood or area in which the cluster is located" (see Appendix A). These instructions did not seem to be adequate to explain the concept, however, and as a result, there were numerous interpretations of locality. Researchers have had considerable difficulty working with this variable in both cross-country and intra-country analyses.⁷

A further difficulty was variation in the procedure used when a facility was identified as being *within the locality*. In some countries, if the facility or service was within the locality, no distance question was asked. In other countries, distance was asked *only* if the facility or service was within the locality.

The coverage of urban clusters presented another problem of comparability. Of the eleven countries covered here, only five included urban clusters in their service availability surveys. Consequently, much of the analysis in this report is limited to rural areas. Further, it should be noted that the definition of "rural" also differs from country to country.

In this report, an attempt has been made to make the data as comparable as possible. However, because some differences are not easily reconciled, there are numerous notes of explanation in the tables.

⁷ In DHS-II, the term *locality* was dropped from the Service Availability Questionnaire and from the Interviewer's Manual.

3 Community Setting

In order to analyze the influence of the community on the decisions and behaviors of individuals and couples, it is necessary to obtain descriptive information about the community setting. The first section of the service availability questionnaire includes a series of questions about the community. Answers to these questions, along with data from the individual questionnaire describing household amenities, provide a general description of the community and the conditions in which the women live (see Tables 3.1 and 3.2).

Table 3.1 presents the characteristics of the rural communities in which the service availability questionnaire was implemented. The type of settlement (settlement pattern) refers to the density of households (or dwelling units) in the cluster. This information is important because the distance women travel to obtain services is usually measured from the center of the cluster. In nuclear settlements, this distance is the same for most women; in dispersed settlements there may be wide variation in the distance women travel for services.

In Colombia, Ecuador, Egypt, Thailand, and Togo, rural women typically live in nuclear or dense settlements; dispersed or scattered settlements are more common in the Dominican Republic, Guatemala, Uganda, and Zimbabwe.

The number of people living in communities varies greatly across countries. While most rural women in the Dominican Republic, Thailand, Togo, and Uganda live in communities of under 2,000 residents, in Egypt and Tunisia most live in larger communities with more than 2,000 people. The most densely populated communities are in Colombia and Ecuador, where over a third of rural women live in localities of more than 10,000 inhabitants. In Guatemala and Zimbabwe, on the other hand, most women live in communities with fewer than 500 people.

Roads are the primary means of access to services in most of the countries surveyed. Only in Colombia and Guatemala are rivers and railways a major means of access for some rural women. In Burundi, Togo, Tunisia, and Uganda, "other" access routes were frequently cited; these include paths which are passable only by foot or by animal.

Distance to the nearest town of 20,000 or more inhabitants is important because many services not found in rural communities are available in towns of this size. In Burundi, the Dominican Republic, Togo, and Tunisia, most women are within 30 kilometers of a town of 20,000 people. In Egypt, they are even closer: most rural women are within 10 kilometers of a town of that size. In Colombia, Ecuador, Guatemala, and Thailand, most rural women are within 50 kilometers of a town of 20,000 people. In Zimbabwe, the opposite is true: most women must

travel more than 50 kilometers to reach an urban center of this size. In Uganda, most women are within 30 miles of a town of 20,000 inhabitants.⁸

Although the rest of the information presented in Table 3.1 is taken from individual or household questionnaires rather than the service availability questionnaire, it is useful in describing the community setting. The percentage of rural women living in households with piped water is low in Burundi, Thailand, Togo, Uganda, and Zimbabwe (2 to 20 percent), moderate in the Dominican Republic, Guatemala, and Tunisia, (30 to 47 percent), and high in Colombia, Ecuador, and Egypt (57 to 60 percent).

In most of the countries surveyed, the majority of rural women live in households with some type of toilet facility. Only in Togo, Tunisia, and Zimbabwe did the majority of women live in households without toilet facilities. Of those countries with data on access to electricity, only the Dominican Republic, Guatemala, and Uganda reported that the majority of rural women live in households without electricity.

Overall, it appears that rural communities in Asia, North Africa, and Latin America are more developed than those in sub-Saharan Africa. However, even in sub-Saharan Africa, most rural women live in communities linked to towns located within 30 kilometers.

Tables 3.2 and 3.3 show the distances to schools and general services for rural and urban women; information on urban women is available only for 5 of the 11 countries (Colombia, the Dominican Republic, Ecuador, Tunisia, and Zimbabwe). Primary schools are common in both rural and urban areas.

In urban areas everywhere and in rural areas of Colombia, the Dominican Republic, Ecuador, Egypt, Guatemala, Thailand, and Togo, a majority of women are located within 1 kilometer of a primary school. In the remaining countries, most rural women are less than 5 kilometers from a primary school.

Secondary schools are somewhat more distant, especially in rural areas. Only in Ecuador are most rural women within 5 kilometers of such a school. In Colombia, the Dominican Republic, Egypt, Thailand, Togo, Uganda, and Zimbabwe, however, over 70 percent of rural women are less than 15 kilo-

⁸ In Uganda, distance questions were generally asked in terms of *miles*. In order to compare distance figures in Uganda with those in other countries, whenever possible these figures were converted to *kilometers* (i.e., if a Ugandan informant said the nearest hospital was 10 miles away, that figure was converted to 16 km). However, for this question, distance was categorized and therefore had to be left in miles (if an informant said the nearest town fell in the category 0-10 miles, this could not be converted and remain consistent with the category 0-10 km.)

Table 3.1 Percent distribution of married rural women by characteristics of their communities and households

Characteristic	Burundi	Togo	Uganda	Zimbabwe	Egypt	Thailand	Tunisia	Colombia	Dominican Republic	Ecuador	Guatemala
TYPE OF RURAL SETTLEMENT^a											
Nuclear	U	63.1	17.6	29.2	79.5	58.2	U	86.6	47.4	84.4	44.9
Disperse	U	30.0	75.8	41.0	20.5	28.2	U	13.4	52.7	15.6	55.1
Other/Missing	U	6.9	6.6	29.8	0.0	13.6	U	0.0	0.0	0.0	0.0
POPULATION SIZE^b											
0-499	U	19.8	14.2	71.9	3.6	26.9	3.1	7.1	42.0	2.9	82.3
500-1999	U	57.8	50.1	28.0	27.2	62.6	24.0	28.2	44.0	2.9	7.5
2000-4999	U	14.9	25.3	0.0	31.8	8.5	51.4	6.6	9.6	35.5	0.0
5000-9999	U	5.6	9.8	0.0	33.0	1.5	12.5	13.3	3.0	21.5	3.8
10,000 or more	U	0.4	0.2	0.0	4.4	0.0	6.5	44.7	0.8	37.2	0.9
Other/Missing	U	1.5	0.4	0.0	0.0	0.5	2.5	0.0	0.6	0.0	5.5
MAIN MEANS OF ACCESS^c											
Road	86.0	78.4	52.9	97.9	98.9	98.9	71.2	71.6	97.1	86.0	90.1
Railway/River	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.2	0.0	0.0	1.4
Other	13.2	19.4	47.0	2.0	0.0	0.6	25.2	1.5	2.3	1.3	2.2
Missing	0.8	2.2	0.0	0.0	1.1	0.5	3.6	20.7	0.6	12.7	6.3
DISTANCE IN KM. TO NEAREST TOWN WITH 20,000 OR MORE^c											
0-10	7.7	14.8	20.0	4.7	67.3	6.7	11.5	5.6	13.8	15.4	24.6
11-30	46.6	46.0	54.3	11.3	31.1	29.2	49.8	40.3	43.6	25.5	22.0
31-50	31.0	17.2	19.2	21.3	0.4	20.3	22.6	20.1	20.6	22.1	18.5
51-100	13.9	14.1	5.7	36.9	1.2	34.1	12.6	10.6	18.1	21.1	22.7
100 or more	0.0	5.6	0.6	22.5	0.0	9.2	0.0	2.7	3.4	3.1	5.9
Missing	0.8	2.3	0.2	3.3	0.0	0.5	3.5	20.7	0.5	12.7	6.3
PERCENT OF WOMEN IN HOUSEHOLDS WITH											
Piped water	9.0	11.3	1.5	20.1	56.8	9.2	30.1	59.7	43.4	58.6	46.5
Other water source	91.0	88.7	98.5	79.9	43.2	90.3	67.3	40.2	55.9	41.4	48.1
Missing	0.0	0.0	0.0	0.0	0.0	0.5	2.6	0.0	0.7	0.0	5.4
Toilet facility	94.8	25.2	82.2	48.8	79.8	60.3	44.1	52.3	99.3	67.9	92.5
No toilet facility	5.1	74.7	17.8	51.2	20.0	39.2	53.3	47.4	0.1	32.1	0.0
Missing	0.0	0.0	0.0	0.0	0.2	0.5	2.6	0.2	0.6	0.0	7.5
Electricity	U	U	1.7	U	87.0	70.6	U	55.8	46.8	54.9	25.0
No electricity	U	U	98.3	U	12.1	29.0	U	44.2	52.6	45.1	69.6
Missing	U	U	0.0	U	0.0	0.4	U	0.0	0.6	0.0	5.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Note: Totals may not add to 100 due to rounding.

U = Unknown, not asked

^aFor Zimbabwe, settlement type was only asked for rural residents of communal lands which accounted for 76.7 percent of rural residents. In Colombia, the Dominican Republic, and Guatemala, settlement type was only asked for respondents in villages; areas where it was not asked are larger and assumed to be nuclear. For Thailand, Other/Missing includes communities with both nuclear and disperse areas.

^bIn Zimbabwe, the population size is the number of households in the cluster.

^cQuestions are only asked in areas with a population under 20,000 in Colombia, Ecuador and Guatemala. In Uganda, this information is in miles.

Source: Community informants; last three variables from individual questionnaire

Table 3.2 Percent distribution of married rural women by distance to various types of schools and services

Distance	Togo	Uganda	Zimbabwe	Egypt	Thailand ^a	Tunisia	Colombia	Dominican Republic	Ecuador ^b	Guatemala ^b
PRIMARY SCHOOL										
< 1 km.	86.8	31.7	31.5	93.6	80.1	47.4	62.4	64.9	79.8	67.5
1-4 km.	4.5	49.1	42.6	4.0	18.2	35.9	27.8	31.8	17.9	19.3
5+ km.	7.7	17.8	21.4	2.4	1.3	14.1	9.8	2.7	2.3	5.1
NA, DK, Missing	1.0	1.4	4.4	0.0	0.4	2.6	0.0	0.6	0.0	8.1
SECONDARY SCHOOL										
< 5 km.	49.2	29.0	49.7	35.4	41.2	11.4	29.9	40.2	54.7	17.6
5-14 km.	31.1	45.9	30.4	44.8	45.6	36.1	40.8	44.6	21.1	0.4
15+ km.	18.2	14.0	16.3	14.8	12.8	50.0	29.4	14.3	3.6	1.3
NA, DK, Missing	1.5	11.1	3.5	5.0	0.4	2.5	0.0	0.9	20.6	80.7
POST-SECONDARY SCHOOL										
< 15 km.	48.8	33.1	7.1	16.9	23.8	4.9	17.6	30.8	3.3	1.0
15-59 km.	31.8	44.6	8.6	61.2	50.3	52.5	38.2	52.6	2.2	0.0
60+ km.	11.0	7.1	29.2	18.1	24.1	40.1	44.2	2.4	0.0	1.3
NA, DK, Missing	8.4	15.2	55.0	3.8	1.8	2.5	0.0	14.2	94.4	97.7
POST OFFICE										
< 5 km.	12.2	15.3	23.8	89.4	33.9	45.5	42.0	29.2	41.8	16.2
5-14 km.	29.0	32.7	26.7	7.9	43.0	37.9	32.9	53.0	29.1	7.5
15+ km.	49.2	41.2	40.7	1.0	22.6	14.1	25.1	16.8	5.1	2.3
NA, DK, Missing	9.6	10.9	8.8	1.8	0.5	2.5	0.0	1.0	24.0	74.0
WEEKLY MARKET										
< 5 km.	U	58.6	80.4	69.6	51.8	22.7	37.7	1.1	42.0	15.7
5-14 km.	U	25.2	17.6	22.4	31.7	42.0	31.7	3.4	31.2	5.9
15+ km.	U	8.9	1.9	3.3	15.9	32.8	30.6	0.2	7.3	1.9
NA, DK, Missing	U	7.3	0.0	4.6	0.6	2.5	0.0	95.3	19.5	76.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Note: Totals may not add to 100 due to rounding. Data for Burundi are excluded because distances were coded as 3 km. or less, 4-5 km., 6-10 km., and 11+ km.

DK = Don't know

NA = Not applicable

U = Unknown, not asked

^aIn Thailand, if service was in the locality, distance was not asked. These responses are included in the smallest distance category.

^bIn Ecuador and Guatemala, if the service was not in the locality, distance was not asked. These responses have been included in the NA category.

Source: Community informants

meters from a secondary school. Secondary schools are most distant in Tunisia, where fully half of rural women are more than 15 kilometers away from such a facility. In contrast, from 81 to 100 percent of women in urban areas are within 5 kilometers of a secondary school. Most rural residents are very distant from post-secondary schools. Only a minority of rural women in each country is within 15 kilometers of a post-secondary school. In most countries, rural residents are within 60 kilometers of such a school, with the exceptions of Ecuador and Guatemala, where most rural residents do not live in communities with post-secondary schools and distance was not asked. In Zimbabwe, the majority of rural residents live in communities where distance to a post-secondary school was not known.

Urban women generally are closer to post-secondary schools: most (from 54 percent in Zimbabwe to 79 percent in Colombia) are within 15 kilometers of such a school. In Ecuador and Zimbabwe, however, there remain sizeable numbers of urban residents more than 60 kilometers from these schools.

Post offices are within 15 kilometers of most rural women (51 to 97 percent) in Colombia, the Dominican Republic, Ecuador, Egypt, Thailand, Tunisia, Zimbabwe. For most urban women (71 to 97 percent), post offices are within 5 kilometers. Weekly markets are within 5 kilometers of most rural women in Egypt, Thailand, Uganda, and Zimbabwe. Most women in Colombia, Ecuador, and Tunisia must travel further than that to a weekly market, however. Weekly markets are within 5 kilometers of the vast majority (77 to 100 percent) of urban women in Colombia, Ecuador, Tunisia, and Zimbabwe. Evidently, weekly markets are uncommon in the Dominican Republic. As expected, urban women in every country are closer to a variety of general services than are women who live in rural areas.

Table 3.3 Percent distribution of married urban women by distance to various types of schools and services

Distance	Zimbabwe	Tunisia	Colombia	Dominican Republic	Ecuador ^a
PRIMARY SCHOOL					
< 1 km.	53.3	89.5	92.0	77.7	97.3
1-4 km.	36.7	8.8	7.7	20.7	2.7
5+ km.	10.0	1.5	0.3	0.0	0.0
NA, DK, Missing	0.0	0.0	0.0	1.6	0.0
SECONDARY SCHOOL					
< 5 km.	81.1	52.8	98.6	95.1	100.0
5-14 km.	15.7	4.3	1.1	2.3	0.0
15+ km.	1.9	2.8	0.3	0.7	0.0
NA, DK, Missing	1.3	0.0	0.0	1.9	0.0
POST-SECONDARY SCHOOL					
< 15 km.	54.0	59.6	78.6	75.6	76.3
15-59 km.	5.0	27.1	7.1	13.9	0.9
60+ km.	8.3	13.2	14.4	1.3	0.0
NA, DK, Missing	32.7	0.0	0.0	9.2	22.8
POST OFFICE					
< 5 km.	62.5	97.3	90.2	96.8	70.7
5-14 km.	11.0	2.6	7.5	1.2	27.0
15+ km.	3.7	0.0	2.3	0.0	0.0
NA, DK, Missing	2.8	0.0	0.0	2.0	2.3
WEEKLY MARKET					
< 5 km.	96.4	77.4	94.6	17.6	100.0
5-14 km.	1.4	20.9	3.8	2.1	0.0
15+ km.	2.2	1.6	1.5	0.7	0.0
NA, DK, Missing	0.0	0.0	0.0	79.6	0.0
Total	100.0	100.0	100.0	100.0	100.0

Note: Totals may not add to 100 due to rounding.

DK = Don't know

NA = Not applicable

^aIn Ecuador, if the service was not in the locality, distance was not asked. These responses have been included in the NA category.

Source: Community informants

4 Availability of Family Planning Services

Previous studies have shown that the availability of family planning services is an important determinant of contraceptive use (Entwisle et al., 1986; Lapham and Mauldin 1972, 1985). This section describes levels and differentials in access to family planning services, as measured by time and distance. There are many other indicators of service availability that will not be examined in this study. For example, other studies have used convenience of access, method choice and cost, quality of staff and services, logistical support, and follow-up care to measure service availability.⁹ While physical proximity as measured by time and distance has been found to be related to various outcomes such as contraceptive use (Puilum, 1991), it can also be viewed as the first step in examining these complicated relationships.

Family planning services are delivered chiefly in two ways: via outreach programs which carry the services to the community and via stationary facilities which require men and women to come to them. Outreach services can consist of a person based in a community (community-based distribution), a person who periodically visits the community (a family planning field worker), a vehicle that periodically visits the community (a mobile clinic), or a team that visits a community (such as an outreach program affiliated with a local hospital). Outreach programs may be limited in scope to motivating community residents to adopt contraception or they may actually distribute contraceptive methods. Stationary facilities also vary in whether and which contraceptive methods are available. Typically, less sophisticated facilities provide methods that require minimal counseling and monitoring, for example, the pill or condom. In contrast, methods such as the IUD, injection, and sterilization require more sophisticated facilities and staff.

This section will begin by examining, first, the extent of rural outreach services for health and family planning and, then, the distance and time to stationary facilities. Next to be presented is women's access, as measured by distance, to various types of modern contraception (including the pill, condom, IUD, injection, and female sterilization). The section closes with an examination of the relationship between service availability and contraceptive use; method mix, user status, and the unmet need for family planning are considered.

4.1 OUTREACH SERVICES

Table 4.1 presents the proportions of currently married rural

⁹ While in the DIIS service availability module measured some of these components during the first phase of the DIIS program, the questionnaire being used during the second phase attempts to collect information in most of these areas.

women who have access to various types of health and family planning providers within their own communities.

Clearly, the availability of outreach services in rural communities varies considerably between countries (Figure 4.1). The data show that rural women in Egypt and Zimbabwe have the best array of service providers: about two-thirds or more of these women have access to each of three different types of outreach services. Outreach services are least widely available in Uganda, where less than a third of rural women live in a community with any type of outreach services.

Table 4.1 Percentage of married rural women living in communities with various types of health and family planning services or personnel

Country	Traditional birth attendant	Trained midwife	Community-based distribution program	Family planning field worker
SUB-SAHARAN AFRICA				
Burundi	91.1	U	74.8	U
Togo	U	85.0	U	U
Uganda	32.4	20.2	1.8	2.2
Zimbabwe	82.9	68.7	76.1	U
NORTH AFRICA/ASIA				
Egypt	88.1	65.6	54.7	65.6
Thailand ^a	60.4	34.3	4.5	22.4
Tunisia	52.3	13.9	70.3	28.1
LATIN AMERICA				
Colombia	77.8	16.0	61.2	49.3
Dominican Rep.	22.0	6.7	U	U
Ecuador	78.4	7.6	46.1	42.8
Guatemala	79.8	U	27.1	13.6

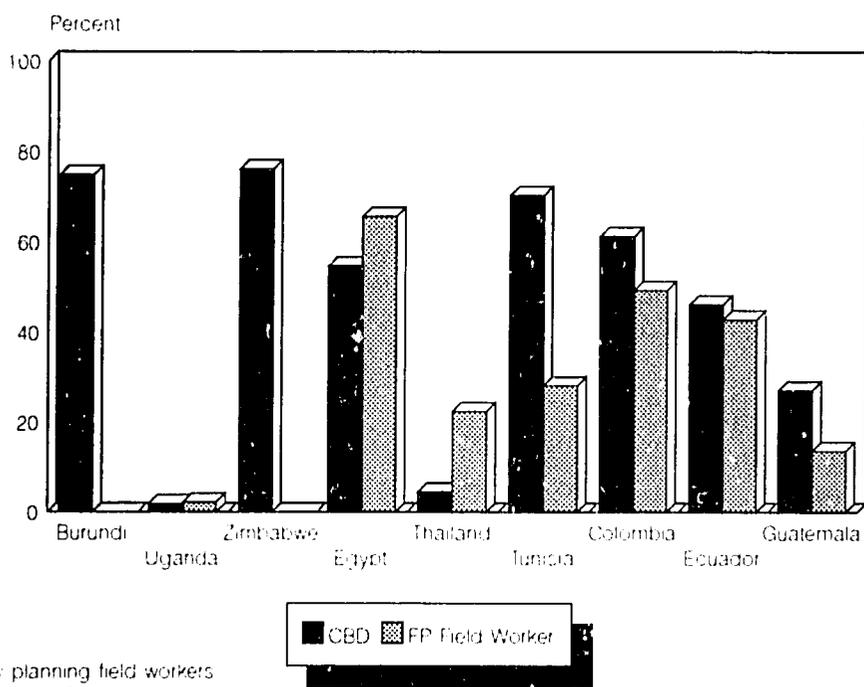
U = Unknown, not asked

^aFor Thailand, family planning field worker refers to a village health volunteer who provides contraceptive methods.

Source: Community informants

Overall, traditional birth attendants are the most accessible health care providers for rural women: the majority of rural women in Burundi, Colombia, Ecuador, Egypt, Guatemala, Thailand, Tunisia, and Zimbabwe live in communities served by a traditional birth attendant. Trained midwives are most common in the African countries: two-thirds or more of the rural women in Egypt, Togo, and Zimbabwe live in a community with a trained midwife. This figure drops to 16 percent or less in the Latin American countries.

Figure 4.1 Percentage of married rural women with family planning services in their communities, Demographic and Health Surveys, 1986-1989



Note: Data on family planning field workers not collected in Burundi or Zimbabwe
Source: Table 4.1

Community-based distribution programs are available to more women than are family planning field workers in most of the countries surveyed. More than half of currently married rural women in Burundi, Colombia, Egypt, Tunisia, and Zimbabwe have access to a community-based distribution program, while sizeable minorities in Ecuador and Guatemala (46 and 27 percent, respectively) also live in communities served by such programs. In contrast, family planning field workers are available to a majority of rural women only in Egypt (66 percent), although substantial minorities (22 to 49 percent) of women in Colombia, Ecuador, Thailand, and Tunisia also live in communities served by a field worker. It is important to note that, while many countries nominally have programs for community-based distribution and family planning field workers, the extent and duties of the workers probably varies widely from country to country.¹⁰

4.2 DISTANCE AND TIME TO STATIONARY FAMILY PLANNING FACILITIES

Table 4.2 and Figure 4.2 present the distribution of currently married women by distance to the nearest facility providing family planning services. The majority of rural women in every

country in North Africa, Asia, and Latin America are within 5 kilometers of a facility providing family planning. Services are most accessible in Egypt, where more than 70 percent of women are within 1 kilometer of a family planning facility. That figure drops to about a third in Colombia, Ecuador, and Guatemala, and to about a quarter or less in the Dominican Republic, Thailand, and Tunisia. Family planning services are not located as close by in sub-Saharan Africa: slightly less than half of rural women in Togo and Zimbabwe are within 5 kilometers of a family planning facility, while in Uganda that proportion drops to just 22 percent.

Service availability information was collected for urban areas in five countries. Virtually all the urban women are within 5 kilometers of a family planning facility, and in four countries out of five (Colombia, the Dominican Republic, Ecuador, and Tunisia), the vast majority of the women are less than 1 kilometer away. For these five countries, the overall national distribution can also be calculated. Over 60 percent of married women are within 1 kilometer of a family planning provider in Colombia, the Dominican Republic, Ecuador, and Tunisia, and the median distance is less than 1 kilometer. In Zimbabwe, however, only a quarter of the women are less than a kilometer away, and the median distance is slightly over 3 kilometers.

¹⁰ The DHS-II service availability questionnaire collects more detailed information about the duties of outreach workers.

Table 4.2 Percent distribution of married women age 15-49 by distance to nearest facility providing family planning services

Distance	Togo	Uganda	Zimbabwe	Egypt ^a	Thailand	Tunisia	Colombia	Dominican Republic	Ecuador	Guatemala
RURAL										
< 1 km.	32.1	8.9	17.3	72.9	17.5	27.6	32.9	29.1	35.4	30.3
1-4 km.	13.3	13.5	30.6	23.2	49.0	32.2	20.6	31.7	27.5	25.9
5-14 km.	24.6	17.6	40.3	4.0	26.2	29.5	37.4	39.3	32.9	24.6
15+ km.	21.0	22.6	9.8	0.0	6.8	8.2	9.1	4.8	4.2	11.5
Other ^b	9.0	37.4	1.8	0.0	0.0	0.0	0.0	0.4	0.0	2.4
Missing	0.0	0.0	0.0	0.0	0.5	2.5	0.0	0.7	0.0	5.3
Median ^c	6.5	19.2	5.2	0.7	3.2	4.4	3.8	4.3	2.8	3.1
URBAN										
< 1 km.	U	U	45.3	U	U	83.3	95.2	84.8	94.2	U
1-4 km.	U	U	42.6	U	U	14.7	4.3	11.9	5.8	U
5+ km.	U	U	9.9	U	U	1.9	0.5	1.7	0.0	U
Other ^b	U	U	2.2	U	U	0.0	0.0	0.0	0.0	U
Missing	U	U	0.0	U	U	0.0	0.0	1.6	0.0	U
Median ^c	U	U	1.1	U	U	0.6	0.5	0.6	0.5	U
TOTAL										
< 1 km.	U	U	25.5	U	U	60.2	74.9	61.3	68.4	U
1-4 km.	U	U	34.2	U	U	22.0	9.6	19.4	15.3	U
5-14 km.	U	U	31.4	U	U	13.3	12.6	16.0	14.4	U
15+ km.	U	U	6.9	U	U	3.4	3.0	1.8	1.8	U
Other ^b	U	U	1.9	U	U	0.0	0.0	0.2	0.0	U
Missing	U	U	0.0	U	U	1.0	0.0	1.3	0.0	U
Median ^c	U	U	3.1	U	U	0.8	0.7	0.8	0.7	U
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Note: Totals may not add to 100 due to rounding. Data from Burundi are excluded because informants were not asked to identify facilities providing family planning services.

U = Unknown, not asked

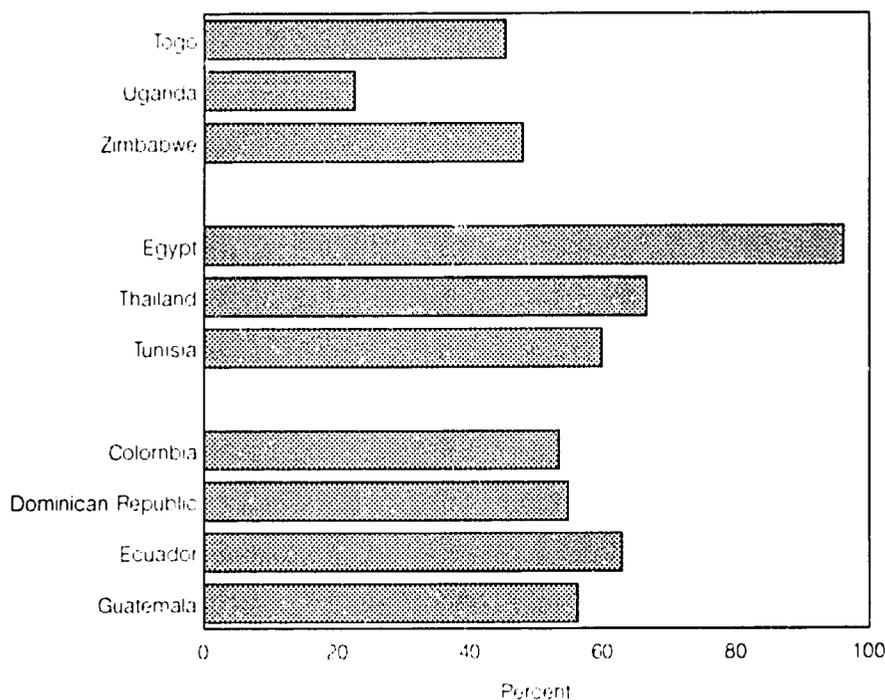
^aIn Egypt, no distance or time estimate was given if the facility was in the village, so these facilities have been put in the <1 km. category.

^bIn Togo, the "other" category signifies that the nearest facility did not provide family planning. In Uganda, the other category signifies that no facility offering family planning was known or the information was missing. In all other countries, the "other" category signifies not applicable.

^cMedians are calculated from those clusters with distances except for Togo and Uganda, where those in the "other" category were included at the upper end in calculating a median.

Source: Community informants

Figure 4.2 Percentage of married rural women within 5 kilometers of a facility providing family planning services, Demographic and Health Surveys, 1986-1989



Source: Table 4.2

Table 4.3 examines access to stationary family planning facilities, as indicated by time and method of transportation. (In Colombia, travel time was asked only of those women using motorized transport so it is excluded from this discussion.) The results follow the same pattern as the previous table. Rural women in Asia, North Africa, and Latin America have relatively ready access to family planning facilities: in the Dominican Republic, Ecuador, Egypt, Guatemala, and Thailand, travel time is less than 30 minutes for most women. In Tunisia, most women are within an hour.

Family planning facilities are less accessible in the sub-Saharan countries. For 40 percent or more of the rural women in Togo and Uganda, either the nearest facility did not provide family planning or no facility providing family planning was known to local informants. For the majority of the remaining women, travel time is 30 minutes or more. The situation is better in Zimbabwe, where most women live within an hour of a family planning facility. Zimbabwe has clearly made an effort to make family planning available in rural facilities, since rural women in Zimbabwe are actually farther from large towns than women in other countries where the surveys were carried out (see Table 3.1).

Walking is the most common mode of transport used by rural women to travel to the nearest family planning facility in all but two countries. The exceptions are Ecuador and Thailand, where motorized transportation (car, bus, motorcycle) is more frequent. In Thailand, the "other" category is also quite important.

In those countries with data on urban areas—the Dominican Republic, Ecuador, Tunisia, and Zimbabwe—the vast majority of urban women are less than 30 minutes from the nearest facility providing family planning services, and most of the women walk there. Since data on both rural and urban areas are available for these four countries, an overall national distribution can be calculated. More than three-quarters of all married women in the Dominican Republic, Ecuador, and Tunisia are within 30 minutes travel time of a facility that offers family planning services; half of married women in Zimbabwe are this close. In all four countries, walking is women's primary means of transport.

Table 4.3 Percent distribution of married women age 15-49 by time (minutes) and mode of transport to nearest facility providing family planning services

Time to facility	Togo	Uganda	Zimbabwe	Egypt	Thailand	Tunisia	Colombia ^a	Dominican Republic	Ecuador	Guatemala
RURAL										
< 30 min.	20.0	7.3	36.3	93.0	65.3	46.8	8.8	62.2	77.9	54.8
30-59 min.	13.9	15.7	19.8	6.3	16.0	39.1	10.7	15.9	14.8	15.3
60+ min.	19.5	36.5	34.9	0.7	8.2	11.6	8.5	19.9	5.3	20.7
Not asked	46.6 ^b	40.5 ^c	8.9	0.0	10.1	0.0	72.0	1.5	0.8	3.8
Missing	0.0	0.0	0.0	0.0	0.4	2.5	0.0	0.5	1.2	5.4
Motorized	U	5.8	21.0	22.5	50.6	21.1	28.0	41.3	55.1	22.2
Walking	U	49.1	73.4	76.5	15.0	74.6	60.2	54.6	36.7	66.9
Other/Not asked	U	45.1	5.5	1.0	34.4	4.3	11.9	4.0	8.3	10.9
URBAN										
< 30 min.	U	U	81.0	U	U	96.1	7.8	97.5	98.7	U
30-59 min.	U	U	13.7	U	U	1.7	0.0	0.6	1.3	U
60+ min.	U	U	1.8	U	U	2.1	0.0	0.1	0.0	U
Not asked	U	U	3.5	U	U	0.0	92.2	1.8	0.0	U
Motorized	U	U	13.4	U	U	4.0	7.8	11.9	27.8	U
Walking	U	U	84.5	U	U	95.8	91.7	86.3	72.2	U
Other/Not asked	U	U	2.2	U	U	0.0	0.5	1.8	0.0	U
TOTAL										
< 30 min.	U	U	49.5	U	U	75.7	8.1	84.0	89.6	U
30-59 min.	U	U	18.0	U	U	17.2	3.5	6.4	7.2	U
60+ min.	U	U	25.1	U	U	6.0	2.8	7.7	2.3	U
Not asked	U	U	7.3	U	U	1.0	85.6	1.7	0.9	U
Motorized	U	U	18.7	U	U	11.1	14.4	23.1	39.7	U
Walking	U	U	76.7	U	U	87.0	81.4	74.2	56.6	U
Other/Not asked	U	U	4.5	U	U	1.7	4.2	2.7	3.6	U
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Note: Totals may not add to 100 due to rounding.

U = Unknown, not asked

^aIn Colombia, travel time was not collected *unless* the mode of transportation was motorized. Therefore, time reflects only motorized travel.

^bIn Togo, the not asked category signifies that the nearest facility did not provide family planning; also, if the facility was located within the locality, time was not asked.

^cIn Uganda, the not asked category signifies that no facility offering family planning was known.

Source: Community informants

4.3 DISTANCE TO VARIOUS TYPES OF FACILITIES

Table 4.4 distinguishes among five different types of stationary facilities that offer family planning services. In every country for which urban data are available, urban women live closer to and can choose from a wider variety of family planning providers than rural women. For example, in Tunisia, over two-thirds of urban women are within 5 kilometers of a health center, a clinic, a pharmacy, and a private doctor (all of which provide family planning services). For rural women in Tunisia, the choices are far more restricted: health centers are the only source of family planning services within 5 kilometers of most women.

In most countries, access to family planning supplies and services in the rural areas is more or less limited to one or two types of providers, generally health centers, pharmacies, or clinics. Health centers are the closest stationary facilities providing family planning services for most rural women in Colombia, Ecuador, Guatemala, Thailand, Tunisia, Uganda, and Zimbabwe. In the Dominican Republic, Egypt, and Togo, clinics and/or pharmacies are more prevalent.

Table 4.4 Median distance (kilometers) and percent within 5 kilometers of five types of facilities offering family planning services for married women according to rural-urban residence

Country	Hospital		Health center		Clinic		Pharmacy		Private doctor	
	Median distance	Percent within 5 km.								
<u>SUB-SAHARAN AFRICA</u>										
Togo										
Rural	a	5.4	a	13.2	a	5.1	a	16.6	a	0.0
Uganda										
Rural	41.5	5.1	a	16.0	U	U	a	8.3	a	11.2
Zimbabwe										
Rural	32.5	6.4	5.7	41.9	a	0.0 ^b	a	0.6	a	1.0
Urban	9.0	20.0	1.4	84.2	a	16.3 ^b	8.4	30.9	4.7	52.4
<u>NORTH AFRICA/ASIA</u>										
Egypt										
Rural	10.9	19.3	12.0	27.6	1.0	69.1	0.9	89.5	a	15.5
Thailand										
Rural	11.2	19.8	4.8	51.8	17.8	19.6	10.4	25.7	U	U
Tunisia										
Rural	27.9	4.9	4.6	57.5	18.2	4.3	12.7	17.8	16.3	12.6
Urban	9.5	37.3	2.3	73.6	3.2	65.0	0.6	96.3	0.7	89.0
<u>LATIN AMERICA</u>										
Colombia										
Rural	15.9	12.1	5.7	47.1	32.8	3.0	10.9	20.0	15.0	13.5
Urban	2.8	77.7	1.1	83.4	4.0	56.8	0.6	99.3	0.7	92.7
Dominican Rep.										
Rural	18.9	4.9	15.3	16.1	8.3	32.6 ^c	9.4	27.5	42.2	8.7
Urban	3.4	62.9	6.6	48.5	0.8	81.4 ^c	0.6	91.4	a	39.4
Ecuador										
Rural	23.4	12.3	6.2	46.3	30.2	11.7	7.9	38.3	10.6	31.2
Urban	3.0	71.0	1.5	78.4	2.1	73.9	0.6	98.9	0.6	95.5
Guatemala										
Rural	a	2.7	3.9	52.2	a	4.0	7.4	38.4	34.2	12.5

U = Unknown, not asked

^aNo distance given for more than half of the cases.

^bZimbabwe National Family Planning Council (ZNFPC) clinic.

^cPrivate clinics in urban areas and rural clinics in the rural areas.

Source: Community informants

Table 4.5 Percent distribution of married rural women age 15-49 by distance (kilometers) to nearest facility offering specific family planning methods

Distance to method	Uganda	Zimbabwe	Egypt	Thailand	Tunisia	Colombia	Dominican Republic	Ecuador	Guatemala ^a
PILL									
0-4 km.	9.6	45.9	96.0	66.4	59.8	51.0	54.8	59.5	52.2
5-14 km.	17.5	39.9	4.0	25.6	28.3	37.4	39.4	32.1	27.8
15 + km.	16.3	11.5	0.0	7.9	8.2	8.6	3.7	3.8	10.0
NA	56.7	2.6	0.0	0.0	3.7	3.0	2.1	4.6	10.0
IUD									
0-4 km.	4.0	2.8	60.9	30.8	52.4	31.4	37.5	26.4	9.6
5-14 km.	17.6	10.0	26.9	41.7	31.1	44.4	41.1	27.8	21.1
15 + km.	12.2	13.7	12.2	24.5	9.3	14.0	15.1	7.7	10.9
NA	66.1	73.3	0.0	2.9	7.2	10.1	6.3	38.0	58.4
INJECTION									
0-4 km.	5.0	0.0	U	65.6	3.1	13.5	6.8	22.2	11.3
5-14 km.	18.0	4.3	U	24.9	19.8	28.9	10.8	12.3	8.7
15 + km.	14.2	2.6	U	9.4	12.7	14.6	8.1	7.5	12.5
NA	62.8	92.9	U	0.0	64.4	43.0	74.2	58.1	67.5
CONDOM									
0-4 km.	8.5	41.8	89.7	65.7	55.2	33.8	52.2	56.5	54.6
5-14 km.	16.6	34.3	7.0	25.3	31.4	44.3	40.2	33.0	26.1
15 + km.	15.0	13.3	1.6	8.8	8.2	12.5	5.6	6.2	10.0
NA	59.9	10.4	1.7	0.0	5.2	9.4	2.0	4.2	9.3
FEMALE STERILIZATION									
0-4 km.	3.1	1.0	U	19.8	2.3	9.3	11.1	11.5	5.3
5-14 km.	13.8	7.8	U	45.2	11.7	32.6	36.4	20.5	13.2
15 + km.	8.1	12.8	U	30.2	34.2	19.2	30.7	11.3	11.5
NA	75.0	78.2	U	4.6	51.8	38.9	21.8	56.8	70.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Note: Totals may not add to 100 due to rounding.

NA = Not applicable; none of the nearest facilities visited offered the contraceptive.

^aData for Guatemala are based on women age 15-44 only

Source: Distance obtained from community informants, method availability obtained from facility informants.

4.4 DISTANCE TO CONTRACEPTIVE METHODS

Tables 4.5 and 4.6 show the distance to the nearest facility providing a specific contraceptive method for rural and urban women. These distributions are conservative, because community informants were *not* asked to identify the nearest provider of each method.¹¹

Rather, the table is constructed from the information gathered during interviewers' visits to nearby facilities. Only one facility of each type—the closest—was visited and then only if it fell within 30 kilometers of the cluster. As already noted, the facilities visited may not be completely representative of the service environment. Other nearby facilities, which were not visited in the course of the survey, might offer different contraceptives.

¹¹ In DHS-II, community informants are asked to identify the nearest provider of each method and to give the distance to that provider.

Table 4.6 Percent distribution of married urban women age 15-49 by distance (kilometers) to nearest facility offering specific family planning methods

Distance to method	Zimbabwe	Tunisia	Colombia	Dominican Republic	Ecuador
PILL					
0-4 km.	87.9	98.0	99.5	92.6	100.0
5+ km.	7.2	1.9	0.0	5.7	0.0
NA	4.9	0.0	0.5	1.7	0.0
IUD					
0-4 km.	55.2	97.2	95.9	89.4	92.1
5+ km.	14.5	2.7	3.4	7.7	5.9
NA	30.3	0.0	0.7	2.9	2.0
INJECTION					
0-4 km.	34.0	21.6	90.6	35.5	58.1
5+ km.	34.1	3.6	0.0	1.7	0.7
NA	31.8	74.7	9.3	62.8	41.2
CONDOM					
0-4 km.	86.1	97.2	97.6	93.1	100.0
5+ km.	11.7	2.7	0.2	5.0	0.0
NA	2.2	0.0	2.1	1.9	0.0
FEMALE STERILIZATION					
0-4 km.	21.4	54.1	59.1	82.5	78.9
5+ km.	61.9	29.2	15.1	12.4	4.5
NA	16.7	16.5	25.8	5.1	16.6
Total	100.0	100.0	100.0	100.0	100.0

Note: Totals may not add to 100 due to rounding.

NA = Not applicable; none of the nearest facilities visited offered the contraceptive.

Source: Distance obtained from community informants, method availability obtained from facility informants.

The results confirm the relative advantage enjoyed by women from North Africa and Asia (Figure 4.3). Most rural women in North Africa and Asia have ready access to a variety of contraceptive methods. For example, almost all rural Egyptian women are within 15 kilometers of facilities offering the pill, IUD, and condom—and most are within 5 kilometers of such facilities. The service environment is also strong in Thailand where 90 percent of rural women are within 15 kilometers of facilities providing the pill, injection, and the condom, and two-thirds or more of the women are within the same distance of a facility providing the IUD and female sterilization. In Tunisia the majority of rural women have access to the pill, IUD, and condom within 5 kilometers, but they must travel much farther for female sterilization and injection.

Both the pill and the condom are widely available in the Latin American countries; over three-quarters of rural women are less than 15 kilometers from facilities supplying these methods, and more than half of rural women live within five kilometers of such facilities. The availability of other methods, however, varies from one country to another. Most women in Colombia and the Dominican Republic have access to the IUD and female sterilization, although they may have to travel farther to reach a facility providing these methods. The majority of women in Colombia also have access to injection.

Of the two sub-Saharan countries for which there are data,¹² Zimbabwe offers better access to family planning methods in rural areas than does Uganda. The pill and the condom are by far the most widely available contraceptive methods in Zimbabwe; over 75 percent of rural women live within 15 kilometers of a facility that distributes them. In contrast, most of these women do not have ready access to female sterilization, injection, and the IUD. Ugandan women have very limited access to all family planning services: no matter what the method, only about a quarter or less of rural women live within 15 kilometers of a facility providing it.

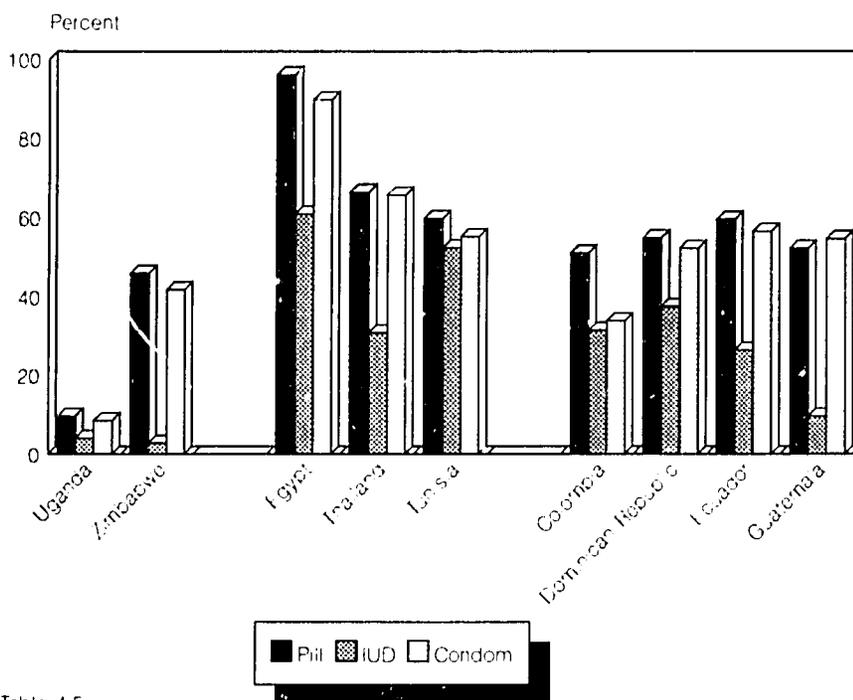
The vast majority of urban women in every country have ready access to the pill and the condom, but not necessarily to all the other methods. The IUD is available from a nearby facility in Tunisia and the Latin American countries, but remains somewhat more difficult to obtain in Zimbabwe. As for injection, they are much more widely available in Colombia than in any of the other countries. Female sterilization (which typically is available only from hospitals) is most readily available in the Dominican Republic and Ecuador; urban women in the other countries must travel farther for the procedure.

4.5 DIFFERENTIALS IN CONTRACEPTIVE USE BY ACCESS

This section moves beyond a simple assessment of the availability of family planning services. Rather, it examines the relationship between physical access to family planning providers and actual contraceptive use. This information can be used as a very rough test of the assumption that women are more likely to use contraceptives if they have better access to family planning services. A true test of this assumption would require more sophisticated analysis involving controls on other variables. Theoretically, distance may affect the prevalence of supply methods more than clinical methods, since the former demands repeated trips to a family planning provider.

¹² The Burundi and Togo surveys did not collect information about the availability of contraceptive methods.

Figure 4.3 Percentage of married rural women within 5 kilometers of a facility providing specific contraceptive methods, Demographic and Health Surveys, 1986-1989



Source: Table 4.5

Tables 4.7 and 4.8 show how contraceptive prevalence rates and the method mix vary by distance to family planning services, among rural and urban women respectively. Contraceptives are divided into three categories: clinical, supply, and traditional methods. Clinical methods include the IUD, NORPLANT®, and male and female sterilization; supply methods include the pill, condom, injection, and vaginals; while traditional methods include periodic abstinence, withdrawal, and other traditional methods. Women are grouped according to the nearest source of family planning services: a family planning field worker or CBD program in the community, a stationary facility within 5 kilometers, a facility 5 to 14 kilometers away, or a more distant facility.

In the three sub-Saharan countries, contraceptive prevalence rates are highest among women with a CBD or field worker in their community or among women who live less than five kilometers from a stationary provider. In Togo, usage rates for both modern and traditional methods are at their highest among the women who live closest to a family planning facility. In Uganda, use of modern methods is highest among women who are closest to a stationary facility and then for women living in a community served by a CBD or family planning field worker. In Zimbabwe, over four-fifths of rural married women live in communities served by an outreach worker, and it is among these women that contraceptive prevalence is highest. It should be noted that differences in contraceptive prevalence rates by

distance from contraceptive source are small and subject to high levels of sampling error.

The data for the rural areas of North African and Asian countries do not entirely follow the expected patterns. In Egypt, contraceptive use is higher among those women who live farther from a provider. However, nearly all rural Egyptian women are within 5 kilometers of some family planning provider or have an outreach program in their community. In rural Thailand, contraceptive use is highest for those with a CBD or family planning field worker who visits their community and declines as distance to a facility increases. However, the changes in method mix are not in the expected direction. While the use of supply methods is high among women with a field worker in their community, for those women served by a stationary facility, the use of supply methods increases with distance and the use of clinical methods declines. The relationship between distance and contraceptive use is also unusual in Tunisia. The prevalence rate is highest for women with a CBD or field worker in their community, but the prevalence rate for those without a CBD worker increases substantially with distance. When only modern methods are considered, however, the rise in prevalence with distance is less substantial.

In Colombia and the Dominican Republic, overall contraceptive use is relatively constant and only falls among women living 15 kilometers or more from a facility offering family planning.

Table 4.7 Contraceptive prevalence rates and method mix for married rural women age 15-49 by distance to nearest facility providing family planning services

Distance/ method mix	Togo	Uganda	Zimbabwe	Egypt	Thailand	Tunisia	Colombia	Dominican Republic	Ecuador	Guatemala ^a
CBD OR PFW										
All users	U	4.5	40.1	26.3	67.1	38.0	52.9	46.9	33.6	25.1
Method mix:										
Clinical	U	1.5	2.0	0.9	28.3	11.9	17.9	32.1	11.2	13.0
Supply	U	0.0	29.4	23.7	37.2	21.3	23.4	11.6	15.4	7.4
Traditional	U	3.0	8.7	1.7	1.5	4.7	11.6	3.1	7.0	4.7
Number of women	U	94	1606	3233	1260	1241	761	904	874	684
0-4 KM.										
All users	35.0	6.7	35.2	17.1	65.4	15.8	56.9	44.7	31.9	10.3
Method mix:										
Clinical	1.0	0.7	2.9	0.9	29.6	7.4	8.7	31.9	18.0	5.8
Supply	1.5	3.2	22.9	14.9	34.5	7.4	27.1	9.9	11.2	2.3
Traditional	32.4	2.8	9.4	1.3	1.3	1.0	21.0	2.9	2.7	2.2
Number of women	794	447	105	856	2440	95	66	418	213	816
5-14 KM.										
All users	31.8	2.2	34.3	30.7	63.7	22.5	61.8	46.0	29.6	6.8
Method mix:										
Clinical	0.2	0.3	0.0	0.9	25.2	11.4	17.0	31.6	8.0	2.5
Supply	0.9	0.5	26.4	29.0	36.9	8.0	26.8	10.4	16.5	2.7
Traditional	30.6	1.4	7.9	0.9	1.6	3.1	18.0	4.0	5.0	1.6
Number of women	431	399	140	126	1082	262	89	226	199	440
15 KM. OR MORE										
All users	30.2	2.2	40.0	*	57.4	30.4	25.0	24.9	30.0	4.3
Method mix:										
Clinical	0.5	0.4	*	*	16.0	*	*	*	*	3.0
Supply	0.8	0.3	*	*	37.8	*	*	*	*	0.9
Traditional	28.8	1.6	*	*	3.6	*	*	*	*	0.4
Number of women	367	531	10	0	306	23	14	17	10	230

CBD = community-based distribution program

FPPFW = family planning field worker

U = Unknown, not asked

*Fewer than 25 women

^aData for Guatemala are based on women age 15-44 only

Source: Distance obtained from community informants, user status obtained from individual survey.

These overall figures, however, mask some interesting variations in method mix. In Colombia, the use of traditional methods is lower when there is a CBD or field worker present in the community. In the Dominican Republic, it is a drop in clinical methods, not supply methods, which fuels the decline in contraceptive prevalence at distances over 15 kilometers. As for Ecuador, overall prevalence changes little with distance. Contrary to expectations, however, the use of clinical methods drops off sharply with distance even as the use of supply methods rises. Only in Guatemala does contraceptive prevalence show the expected decline as distance to a family planning provider increases.

Figure 4.4 shows the use of modern contraceptive methods among married rural women by distance to the nearest family planning source. While contraceptive prevalence declines with distance in half the countries, it is unaffected in two countries and rises in three. Thus, for rural women, the relationship between contraceptive use and service availability is not entirely straightforward.

Table 4.8 shows how contraceptive use varies according to the availability of family planning services among urban women in five countries. Once again, there is no clear trend. In Zimbabwe, overall contraceptive use is highest among those urban women who live in a community served by a CBD or family planning field worker, followed by women who are from 1 to 4 kilometers from a family planning provider. In Tunisia, virtually all urban women have a CBD or field worker in their community, so little can be said about the effect of distance. In Colombia, the Dominican Republic, and Ecuador, contraceptive use varies little among the different categories.

Table 4.9 analyzes distance and contraceptive status for rural women; it contrasts current contraceptive users with women who have an unmet need for family planning (defined as nonusers who either do not want a child in the next two years or do not want any more children). The data suggest that women who live closer to a family planning provider are more likely to use a method than women who may be similarly motivated but live farther from a facility. In Egypt, Guatemala, and Tunisia, the presence of a family planning field worker or CBD program in the community seems to be strongly associated with contraceptive use. In Thailand, Togo, and Uganda, contraceptive use is associated less with the presence of an outreach program and more with the distance to stationary facilities. While the general trend may be for women with an unmet need for family planning to be farther away from a provider than current users, there are several exceptions. In Colombia, the Dominican Republic, Ecuador, and Zimbabwe, there is little difference in the distribution of users and of women with an unmet need according to their distance from a family planning provider.

Table 4.8 Contraceptive prevalence rates and method mix for married urban women age 15-49 by distance to nearest facility providing family planning services

Distance/ method mix	Zim- babwe	Tunisia	Colom- bia	Dominican Republic	Ecu- ador
<u>CBD OR FPFW</u>					
All users	54.7	60.5	71.3	48.6	53.2
Method mix:					
Clinical	3.4	11.2	20.0	32.5	17.0
Supply	48.8	36.5	39.6	12.7	25.8
Traditional	2.4	12.8	11.6	3.4	10.4
Number of women	289	2335	1621	329	1593
<u>< 1 KM.</u>					
All users	44.7	63.6	63.3	52.8	51.7
Method mix:					
Clinical	4.0	*	16.2	34.7	31.0
Supply	36.0	*	34.4	14.8	10.3
Traditional	4.6	*	12.7	3.2	10.3
Number of women	150	11	244	1895	58
<u>1-4 KM.</u>					
All users	53.7	*	67.4	49.8	*
Method mix:					
Clinical	3.3	*	15.4	28.7	*
Supply	48.4	*	31.7	17.3	*
Traditional	2.0	*	20.2	3.8	*
Number of women	246	0	55	277	10
<u>5 KM. OR MORE</u>					
All users	46.8	*	*	*	*
Method mix:					
Clinical	6.5	*	*	*	*
Supply	36.4	*	*	*	*
Traditional	3.9	*	*	*	*
Number of women	77	0	0	13	0

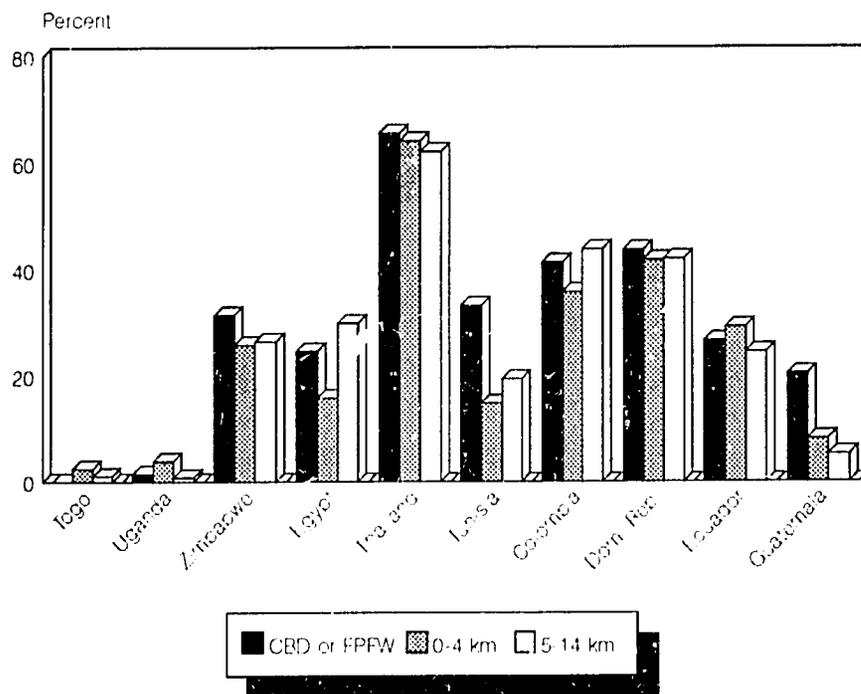
*Fewer than 25 women

CBD = community-based distribution program

FPFW = family planning field worker

Source: Distance obtained from community informants, user status obtained from individual survey.

Figure 4.4 Prevalence of modern contraceptive methods among married rural women by distance to nearest family planning source, Demographic and Health Surveys, 1986-1989



Note: Category 15+ km. omitted due to lack of data
 Source: Table 4.7

Table 4.9 Percent distribution of married rural women (MRW) age 15-49 using family planning and those with unmet need for family planning by distance to nearest facility providing family planning

Distance/ user status	Togo	Uganda	Zimbabwe	Egypt	Thailand	Tunisia	Colombia	Dominican Republic	Ecuador	Guatemala
CBD OR FPFW										
Users (MRW)	U	5.3	87.8	82.4	25.5	85.3	80.8	59.0	69.2	58.1
Unmet need	U	4.1	85.2	76.5	23.4	73.6	84.4	58.6	66.0	27.0
< 1 KM.										
Users (MRW)	34.3	13.2	3.3	7.7	14.8	0.0	6.3	12.7	5.8	10.8
Unmet need	30.8	5.7	4.7	11.0	10.6	0.0	4.6	12.3	4.9	13.8
1-4 KM.										
Users (MRW)	11.9	21.1	1.5	6.4	33.5	2.7	1.1	13.1	10.4	17.8
Unmet need	15.8	13.2	1.6	10.1	34.5	6.0	1.7	12.8	11.6	25.5
5 KM. OR MORE										
Users (MRW)	40.9	23.7	7.1	3.6	26.2	11.7	11.8	15.1	14.6	13.2
Unmet need	47.7	40.9	8.5	2.4	31.5	20.4	9.2	16.0	17.5	33.6
NOT KNOWN/ASKED^a										
Users (MRW)	12.8	36.8	0.2	0.0	0.0	0.3	0.0	0.0	0.0	0.0
Unmet need	5.6	36.2	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Note: Totals may not add to 100 due to rounding. In this table, unmet need is defined as women who are not using any form of contraception and who either do not want any more children or want to wait at least 2 years before having a child.

CBD = Community-based distribution program

FPFW = family planning field worker in the community

MRW = Married rural women

U = Unknown, not asked

^aIn Togo, this category signifies that the nearest facility did not provide family planning. In Uganda, it signifies that no facility offering family planning was known or the information was missing.

Source: Distance obtained from community informants, use status obtained from individual questionnaire.

5 Availability of Maternal and Child Health Services

The availability of health services and its impact on health utilization has not been analyzed as extensively as family planning availability, although it has been examined in some settings (Stock, 1983; Wong et al., 1987). Many of the constraints on the use of family planning services are also relevant to the utilization of health services (i.e., transport costs, difficulty of access, and quality of services). During the first phase of DHS, the service availability module collected selected information¹³ about the availability of health services for women and children; this information is presented in Tables 5.1-5.4. The first two tables examine how far women must travel to reach the nearest provider of health services, while the last two tables look at the availability of specific health services that are important for women and children.

5.1 DISTANCE AND TIME TO HEALTH FACILITIES

Table 5.1 and Figure 5.1 show how far married women in each country must travel to reach the nearest provider of health services.¹⁴ A comparison with Table 4.2 and Figure 4.2 shows that health services are as close or closer than family planning services in every country surveyed. Where family planning programs are fully integrated into the health delivery system (as in Egypt, Thailand, and Zimbabwe), the distributions for family planning and health services are nearly identical. In other countries, health services are slightly or substantially more available than family planning services.

The best access to health services in sub-Saharan Africa is in Togo, where most rural women are less than 5 kilometers from a health provider. Indeed, 44 percent are less than 1 kilometer from such a provider; only in Egypt do more rural women live that close to health providers. Health care for rural women is least accessible in Uganda, although even there over half the women are within 15 kilometers of a health provider (the median distance being 6.4 kilometers). In Zimbabwe, nearly half of all rural women are within 5 kilometers of some type of health provider, and only 12 percent are more than 15 kilometers distant from one.

In the North African, Asian, and Latin American countries, most rural women live fairly close to a facility providing health services. In Egypt virtually all rural women are less than kilometers

¹³ In the second phase of the DHS program, the collection of information on the availability and quality of health services was greatly expanded.

¹⁴ In most countries, the nearest health facility of any kind was identified. However, in Zimbabwe the nearest facility offering maternal and child health services was identified. In DHS-II, the service availability module asks informants to identify the nearest facility offering maternal and child health services.

from a provider, and most are less than 1 kilometer away. In Thailand and Tunisia, about two-thirds of rural women are within 5 kilometers of a health provider. In all the countries studied in Latin America, most rural women (from 54.8 to 63.7 percent) are within 5 kilometers of a health provider, and only a small number must travel 15 kilometers or more to reach a health care facility.

For urban women, there is nearly always a health provider within 5 kilometers. Only in Zimbabwe do many urban women (10.8 percent) travel more than 5 kilometers in order to reach a health provider.

Table 5.2 examines the time expended and mode of transport used by women to reach the nearest health facility; it is similar to Table 4.3 on access to family planning services. In the Dominican Republic, Ecuador, Egypt, Guatemala, Thailand, and Togo, most rural women can reach a health facility in less than 30 minutes. Only in Uganda and Zimbabwe do many rural women (49 and 34 percent, respectively) need more than an hour to travel to the nearest health facility. Most rural women walk, except in Ecuador and Thailand where a majority of rural women use motorized transportation (bus, car, or taxi). In Thailand, rural women also frequently cited other means of transportation (boat, bicycle). As for urban women, no matter what the country, nearly all are within 30 minutes of a health facility, and most walk there.

There appears to be good access to health facilities for both rural and urban women in the countries studied. However, the level and extent of health services offered by these facilities may vary greatly. The next two tables examine specific types of health services provided by nearby facilities.

5.2 AVAILABILITY OF HEALTH SERVICES TO WOMEN AND CHILDREN

Table 5.3 analyzes access to four different types of health services: general services, emergency care, family planning, and maternal and child health (MCH) services. Only the nearest facility of each type (i.e., hospitals, health centers, clinics, pharmacies, and private doctors) is considered in the data.

General and maternal and child health services are more readily available in the countries of sub-Saharan Africa than are other health services. In Togo, maternal and child health services and general health services are available within 15 kilometers of most rural women; women must travel somewhat farther to reach a facility where family planning is available. In Uganda, where health services of all kinds are less readily available,

general health services are most likely to be offered, followed by maternal and child health services. Emergency care and family planning services are considerably further away, if available at all. In Zimbabwe, general services, maternal and child health services, and family planning are almost equally available, and over 85 percent of women need travel no farther than 14 kilometers to reach a provider.

Services of all kinds are generally more accessible in the North African and Asian countries. In Egypt, the majority of rural women are within 5 kilometers of general, family planning, and maternal and child health services, and few women need to travel 15 kilometers or more for any of them. In Thailand, nearly two-thirds of rural women are within 5 kilometers of all four types of health services. In Tunisia, rural women are closest to facilities where general health and family planning services are available; both maternal and child health services and emergency care are much less readily available. In fact, only half of all rural women are within 15 kilometers of a provider of maternal and child health services.

In the Latin American countries, roughly half of all rural women are within 5 kilometers of a facility providing each type of health service; at most a fifth of the women need to travel 15 kilometers or more to obtain access to any one of the services (with the exception of maternal and child health services in Ecuador). In rural Colombia, emergency care is slightly more distant than other services, while maternal and child health services are not as accessible as other services in Ecuador. Generally, however, it appears that most health facilities in the four Latin American countries provide all types of services.

Health services are more readily available in urban than rural areas. For the great majority of urban women in each of the five countries with data, health facilities providing services of all kinds are less than 5 kilometers away. Emergency care in Tunisia is the only exception to this pattern: only two-thirds of urban women in that country can find emergency services without traveling 5 kilometers or more.

Table 5.4 examines the availability of health services for young children age 0 to 4 years. Three services critical to this age group are considered: ORS (oral rehydration salts), immunization, and general maternal and child health services. In Togo, nearly two-thirds of children are within 5 kilometers of these three health services, and less than one child in seven must travel further than 14 kilometers to reach a facility offering these services. The situation is far different in Uganda, where over half of all children must travel 15 kilometers or more to reach a facility offering maternal and child health services and ORS packets. There, just 27.3 and 18.3 percent of children are within 5 kilometers of a facility providing maternal and child health and ORS packets, respectively. In Zimbabwe, about half of rural children are within 5 kilometers of a facility offering

maternal and child health services and immunization; only one in seven are more than 14 kilometers distant.

In Egypt, ORS packets are the most accessible of the three health services, probably due to their distribution by pharmacies. Most children also live within 5 kilometers of a facility offering maternal and child health services, but immunization tends to be farther away. In Thailand, two-thirds of rural children are within 5 kilometers of maternal and child health services and ORS packets. (ORS packets are probably available wherever maternal and child health services are offered in Thailand.) Rural children in Tunisia have much further to travel, on average, to reach health services. Only about 15 percent of rural children are within 5 kilometers of either ORS or maternal and child health services, and over 60 percent are more than 15 kilometers from a pharmacy or doctor who supplies ORS packets.

In Latin America, maternal and child health services are generally more accessible to rural children than ORS packets, with the exception of the Dominican Republic where ORS seems to be an integral part of maternal and child health services. Rural children in Ecuador must travel the farthest to reach a provider of ORS packets, possibly because of an emphasis on home solutions for the treatment of diarrhea.

Urban children have considerably better access to health services than their rural peers in each of the countries for which there are data. Nearly all the urban children are within 5 kilometers of maternal and child health services. Both in Tunisia and Ecuador, however, urban children are somewhat more distant from a source of ORS packets, compared to maternal and health services.

While it appears that health services are generally available to women and children in these countries (with the possible exception of Uganda), the service categories used are too broad to delineate specific gaps in coverage that need to be addressed by health care programs. The second phase of DHS will gather more detailed information, inquiring about the availability of specific maternal and child health services including antenatal, delivery, and postnatal care, immunization, child growth monitoring, and oral rehydration therapy. The revised questionnaire also asks what hours the services are available and when the facility first offered them. More detailed data hopefully will allow a more in-depth assessment of the *availability* of health services in each country surveyed.

Table 5.1 Percent distribution of married women age 15-49 by distance to nearest facility providing health services, according to rural-urban residence

Distance	Togo	Uganda	Zimbabwe	Egypt ^a	Thailand	Tunisia	Colombia	Dominican Republic	Ecuador	Guatemala
RURAL										
< 1 km.	44.0	15.4	17.3	72.9	17.5	32.5	36.9	23.1	36.2	30.2
1-4 km.	17.2	19.7	31.5	23.2	49.0	32.2	24.3	31.7	27.5	28.5
5-14 km.	24.4	23.8	39.5	4.0	26.2	28.9	31.2	39.3	32.9	25.0
15+ km.	14.5	20.3	11.6	0.0	6.8	3.8	7.6	4.8	3.4	10.9
Other/Missing	0.0	20.8	0.0	0.0	0.5	2.6	0.0	1.1	0.0	5.4
Median	2.7	6.4	5.1	0.7	3.2	4.2	3.4	4.3	2.7	2.9
URBAN										
<1 km.	U	U	49.8	U	U	83.7	95.3	90.1	94.2	U
1-4 km.	U	U	39.4	U	U	14.7	4.7	6.6	5.8	U
5+ km.	U	U	10.8	U	U	1.5	0.0	1.7	0.0	U
Other/Missing	U	U	0.0	U	U	0.0	0.0	1.6	0.0	U
Median	U	U	1.0	U	U	0.6	0.5	0.5	0.5	U
TOTAL										
< 1 km.	U	U	26.9	U	U	62.4	76.2	64.6	68.8	U
1-4 km.	U	U	33.8	U	U	22.0	11.1	16.2	15.3	U
5-14 km.	U	U	31.0	U	U	12.9	10.2	16.0	14.4	U
15+ km.	U	U	8.2	U	U	1.6	2.5	1.8	1.5	U
Other/Missing	U	U	0.0	U	U	1.0	0.0	1.4	0.0	U
Median	U	U	3.1	U	U	0.8	0.7	0.8	0.7	U
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

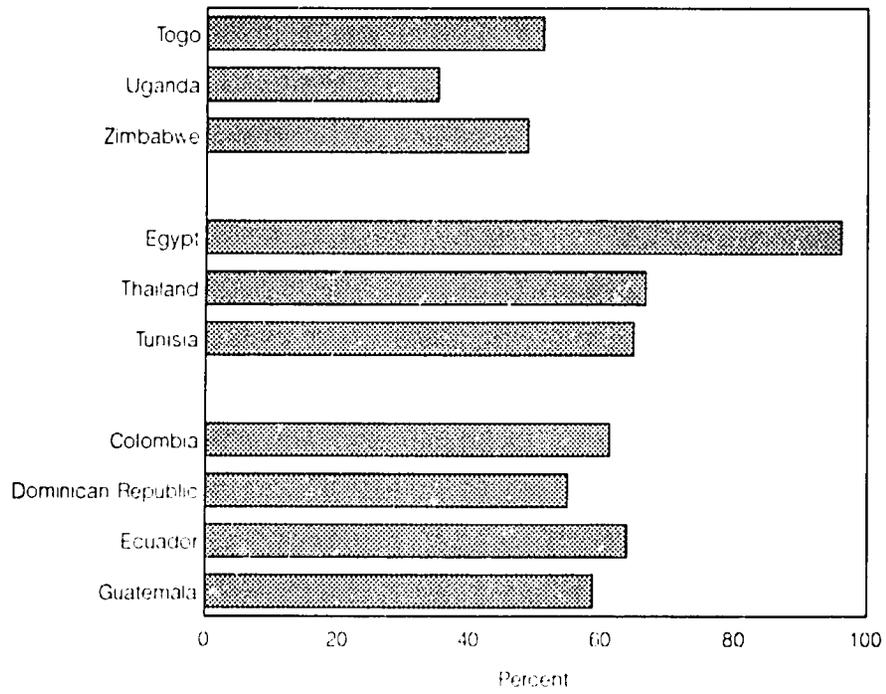
Note: Totals may not add to 100 due to rounding. Medians are calculated based on clusters which have distances, except for Uganda, where those in the "other" category were included at the upper end in calculating the median.

Note: In Uganda, the "other" category signifies that no facility was known or the information was missing. In Egypt, the "other" category signifies that there was no health facility within 30 km. In all other countries, the "other" category signifies missing information or not applicable.

U = Unknown, not asked

^aIn Egypt, no distance estimate was given if the facility was in the village, so these facilities have been put in the <1 km. category.

Figure 5.1 Percentage of married rural women within 5 kilometers of a facility providing health services, Demographic and Health Surveys, 1986-1989



Source: Table 5.1

Table 5.2 Percent distribution of married women age 15-49 by time (minutes) and mode of transport to nearest facility providing health services, according to rural-urban residence

Time	Togo	Uganda	Zimbabwe	Egypt ^a	Thailand	Tunisia	Colombia ^b	Dominican Republic	Ecuador	Guatemala
RURAL										
< 30 min.	73.1	12.8	36.3	89.7	66.4	48.3	12.5	62.2	77.9	57.3
30-59 min.	10.3	21.3	20.7	9.3	15.1	39.6	8.2	15.7	14.0	15.2
60+ min.	16.5	48.5	34.0	0.0	8.2	9.6	5.9	19.9	6.1	20.2
Not asked	0.0	17.4	8.9	0.9	10.3	2.7	73.4	2.2	2.0	7.3
Motorized	U	5.1	20.0	31.8	50.6	19.7	26.6	40.8	55.1	22.8
Walking	U	71.4	73.4	66.2	14.2	76.0	61.6	55.1	36.7	68.1
Other/Not asked	U	23.5	6.5	1.9	35.2	4.3	11.9	3.9	8.2	9.1
URBAN										
< 30 min.	U	U	80.7	U	U	98.8	9.0	97.4	98.7	U
30-59 min.	U	U	13.7	U	U	1.1	0.0	0.7	1.3	U
60+ min.	U	U	1.8	U	U	0.0	0.0	0.1	0.0	U
Not asked	U	U	3.7	U	U	0.0	91.0	1.8	0.0	U
Motorized	U	U	8.0	U	U	6.2	9.0	8.8	26.4	U
Walking	U	U	85.8	U	U	93.7	90.7	89.4	73.6	U
Other/Not asked	U	U	6.3	U	U	0.0	0.3	1.8	0.0	U
TOTAL										
< 30 min.	U	U	49.4	U	U	77.9	10.1	84.0	89.6	U
30-59 min.	U	U	18.7	U	U	17.0	2.7	6.4	6.9	U
60+ min.	U	U	24.5	U	U	4.0	1.9	7.7	2.7	U
Not asked	U	U	7.3	U	U	1.1	85.3	1.9	0.8	U
Motorized	U	U	16.4	U	U	11.8	14.7	21.0	39.0	U
Walking	U	U	77.0	U	U	86.4	81.2	76.3	57.4	U
Other/Not asked	U	U	6.4	U	U	1.7	4.1	2.7	3.6	U
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Note: Totals may not add to 100 due to rounding. In Uganda, "not asked" signifies that no facility was known or the information was missing. In all other countries, the "not asked" category includes missing or not applicable information.

U = Unknown, not asked

^aIn Egypt, no distance or time estimate was given if the facility was in the village, so these facilities have been put in the <1 km. category.

^bIn Colombia, travel time was not collected *unless* the mode of transportation was motorized. Therefore, time reflects only motorized travel.

Source: Community informants

Table 5.3 Percent distribution of married women age 15-49 by distance (kilometers) to nearest facility offering various health services according to rural-urban residence

Country/ residence	General				Emergency				Family planning				Maternal/child health				Total
	0-4	5-14	15+	NA	0-4	5-14	15+	NA	0-4	5-14	15+	NA	0-4	5-14	15+	NA	
SUB-SAHARAN AFRICA																	
Togo																	
Rural	60.2	22.3	12.5	5.0	U	U	U	U	45.4	24.6	21.0	9.0	60.5	24.4	10.1	5.0	100.0
Uganda																	
Rural	33.6	23.6	12.6	30.3	17.2	22.7	12.0	48.1	11.1	17.4	13.6	57.9	25.2	20.8	14.1	39.9	100.0
Zimbabwe																	
Rural	48.8	39.5	11.6	0.0	U	U	U	U	44.6	41.7	10.9	2.7	48.8	38.7	10.6	1.9	100.0
Urban	89.2	10.8	0.0	0.0	U	U	U	U	87.9	9.9	0.0	2.2	87.9	8.3	0.0	3.7	100.0
NORTH AFRICA/ASIA																	
Egypt																	
Rural	83.6	9.6	4.8	1.9	U	U	U	U	80.5	15.2	3.6	0.7	71.7	20.6	5.8	1.9	100.0
Thailand																	
Rural	63.8	26.7	7.9	1.6	60.6	28.9	9.0	1.6	63.8	26.7	7.9	1.6	66.0	26.7	6.8	0.5	100.0
Tunisia																	
Rural	64.7	28.9	3.8	2.7	6.9	32.9	47.2	12.9	58.1	24.7	11.8	5.4	14.6	35.4	38.4	11.6	100.0
Urban	97.5	2.3	0.0	0.0	66.6	28.7	0.0	4.6	90.3	4.5	0.0	5.1	93.2	6.3	0.0	0.4	100.0
LATIN AMERICA																	
Colombia																	
Rural	59.9	32.5	4.6	3.0	45.7	36.0	9.0	9.4	56.2	36.2	4.6	3.0	54.8	36.2	6.1	3.0	100.0
Urban	98.7	0.5	0.0	0.8	98.1	1.8	0.0	0.1	96.6	3.4	0.0	0.0	99.0	0.5	0.0	0.4	100.0
Dominican Rep.																	
Rural	50.7	38.6	5.6	5.1	49.0	40.4	5.6	5.1	46.4	42.2	5.6	5.8	50.8	38.9	5.3	5.1	100.0
Urban	95.1	2.9	0.0	2.0	95.0	2.8	0.0	2.2	89.2	4.8	0.0	6.0	95.3	2.8	0.0	1.9	100.0
Ecuador																	
Rural	52.7	35.3	5.6	6.4	43.4	38.3	7.4	10.8	50.7	36.7	5.6	7.0	40.7	25.8	3.4	30.2	100.0
Urban	97.2	2.8	0.0	0.0	95.6	4.4	0.0	0.0	98.4	1.6	0.0	0.0	99.0	0.0	0.0	1.0	100.0
Guatemala																	
Rural	53.2	27.0	9.7	10.1	55.0	27.9	9.7	7.4	52.0	27.1	11.0	9.9	58.2	25.5	9.0	7.3	100.0

Note: Totals may not add to 100 due to rounding.

NA = Not applicable; most of the cases in the NA category are those for which the facilities visited did not offer such services or the cluster informants did not know of any facility with the service, or the nearest facility (which might have the service) is more than 30 kilometers away. A small percentage is due to missing data. Thus, most of the cases in this category can be assumed to be like those in the "15+" category.

U = Unknown, not asked

Source: Distance obtained from community informants, services available obtained from facility informant.

Table 5.4 Percent distribution of children under age five by distance (kilometers) to nearest health facility offering ORS packets, immunizations and maternal/child health services according to rural-urban residence

Country/ residence	ORS packets				Immunizations				Maternal/child health services				Total
	0-4	5-14	15+	NA	0-4	5-14	15+	NA	0-4	5/14	15+	NA	
SUB-SAHARAN AFRICA													
Togo													
Rural	68.2	18.8	8.8	4.2	63.6	21.2	11.4	3.8	68.2	19.8	8.3	3.8	100.0
Uganda													
Rural	18.3	19.6	12.3	49.8	U	U	U	U	27.3	19.8	12.4	40.5	100.0
Zimbabwe													
Rural	U	U	U	U	49.0	37.1	11.3	2.6	49.4	37.5	11.3	1.8	100.0
Urban	U	U	U	U	86.2	6.3	0.0	7.6	86.2	9.6	0.0	4.2	100.0
NORTH AFRICA/ASIA													
Egypt													
Rural	82.8	7.2	5.8	4.2	54.8	31.4	8.7	5.0	72.1	20.5	5.8	1.6	100.0
Thailand													
Rural	68.5	25.3	5.6	0.5	U	U	U	U	68.5	25.3	5.6	0.5	100.0
Tunisia ^a													
Rural	14.4	20.0	17.5	48.1	U	U	U	U	15.2	35.4	37.1	12.3	100.0
Urban	73.9	3.6	0.0	22.4	U	U	U	U	94.2	5.2	0.0	0.5	100.0
LATIN AMERICA													
Colombia													
Rural	49.7	33.7	12.7	3.9	U	U	U	U	61.0	30.6	5.1	3.3	100.0
Urban	98.1	0.6	0.0	1.3	U	U	U	U	98.7	0.6	0.0	0.7	100.0
Dominican Rep.													
Rural	51.4	38.5	5.0	5.1	U	U	U	U	51.9	38.2	4.8	5.1	100.0
Urban	95.1	2.2	0.0	2.7	U	U	U	U	95.5	2.2	0.0	2.2	100.0
Ecuador													
Rural	29.1	22.8	5.0	43.2	U	U	U	U	43.1	24.5	3.7	28.7	100.0
Urban	79.1	9.1	0.0	11.8	U	U	U	U	99.2	0.0	0.0	0.8	100.0
Guatemala													
Rural	55.6	25.2	8.1	11.1	U	U	U	U	59.5	23.1	7.0	10.4	100.0

Note: Totals may not add to 100 due to rounding.

NA = Not applicable; most of the cases in the NA category are those for which the facilities visited did not offer such services, or the cluster informants did not know of any facility with the service, or the nearest facility (which might have the service) is more than 30 kilometers away. A small percentage is due to missing data. Thus, most of the cases in this category can be assumed to be like those in the "15+" category.

ORS = Oral rehydration salts

U = Unknown, not asked

^aORS availability was only asked of pharmacies and private doctors.

Source: Distance obtained from community informants, services available obtained from facility informant.

6 Summary and Conclusions

The first phase of the DHS project has been perhaps the most extensive attempt yet to obtain detailed service availability data in developing countries. Although these data have some serious limitations, frequently they have been the only data available for policymakers to assess and modify the coverage of health and family planning services. Moreover, the systematic collection and review of DHS-I data has suggested new directions in defining the crucial components of the service environment and in assessing how they affect individual behavior. Many of these findings are being tested in the revised questionnaire fielded during the second phase of DHS.

The survey results on the availability of health and family planning services are not surprising. The countries in sub-Saharan Africa generally having the weakest service environments. There is more diversity among the North African and Asian countries examined, while service environments appear fairly similar in the four Latin American countries. Countries with the greatest array of services are Colombia, Ecuador, Egypt, and Thailand, while Burundi, Togo, and Uganda have the most restricted configurations of services. Zimbabwe has the most favorable service environment of the sub-Saharan countries, while Guatemala has the least developed service environment of the Latin American countries.

Although the relationship between service availability and contraceptive use was examined, the results were disappointing as few strong relationships appeared. It is hoped that with the data from the second phase of DHS, the analysis can be expanded to health services.

Such an analysis might ask, for example, whether the availability of health providers has any impact on whether women seek out antenatal care or deliver their babies in a stationary facility.

The findings of this study raise additional questions that warrant further research. The results suggest that community-based and outreach programs are important, but need to be better understood in studies examining and explaining the relationship between the availability and use of services. It is also possible that the *type* of facility—not just its mere existence—might be an important determinant of contraceptive use or health service utilization. For example, a clinic might be a more effective provider of family planning than a pharmacy. Furthermore, the density and quality of services may be more important indicators of service availability than the distance and travel time indices used in this report.

The experience gained during the first five-year phase of DHS has been valuable in redesigning the service availability survey. Many of the shortcomings discussed here are being addressed in DHS-II. Questions have been added to better understand outreach programs, determine contraceptive method availability, understand what specific health services are available, and record density of supply. Field procedures have also been strengthened, with more thorough training and emphasis on problem areas. In addition, validity and reliability assessments of the data are planned in order to better evaluate their accuracy.

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Appendix A
Service Availability Questionnaire

DEMOGRAPHIC AND
HEALTH SURVEYS

SERVICE AVAILABILITY
QUESTIONNAIRE

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SECTION 1: RATIONALE

Introduction

The DHS project has included a special questionnaire focussed mainly on the availability of family planning and health services. Following the experience of the WFS community module, this questionnaire is aimed at collecting information about the facilities available to the population in the sample clusters or segments from which individual women are selected for interview with the standard core questionnaire. The basic objective is to collect information simultaneously about the service environment in which the women and the children live, along with the individual data on reproductive characteristics and health of children.

This memorandum is intended to describe the reasons for the collection of these service availability data, which do require a special effort and significant expense.

Background

The proposal for collecting community-level information that would be integrated with individual data on women originated in the WFS in a paper by Ronald Freedman in 1974.* This resulted in the development of a schedule of questions about the socioeconomic environment and family planning facilities available to women in the sample points selected. The WFS collected such community data in 17 countries but concentrated on rural areas (15 of the 17 collected community data in rural areas only). Indeed, one of the unresolved questions in DHS is whether to confine the collection of such information to the rural areas because most of the service facilities of interest are obviously available in the larger cities.

The decision to include this type of supplementary questionnaire in the DHS was primarily an outgrowth of deliberations about the measurement of the availability of family planning supplies and information. The section of the individual questionnaire on this topic was the subject of much debate in the early days of questionnaire development. Throughout these discussions, there was the continuous appreciation of the fact that availability has been both subjective and objective dimensions, and that the individual questionnaire was best suited for the collection of data on perceptions of sources and services and where they had obtained contraceptive services. On the other hand, the feeling was that a mapping of the actual presence of such facilities could best be achieved by a separate data collection procedure that would concentrate on cataloguing the types of services available, their actual proximity to the women in the area, and other characteristics related to transportation time, professional services, methods available, cost, and the days and hours open. Since the DHS is also focussed on child health, the

*WFS Occasional Paper, No. 9, 1974.

inventory of facilities was expanded to include details on the availability and characteristics of hospitals, clinics, health centers, pharmacies, and private doctors. In addition to this inventory of family planning and health services, the supplementary questionnaire also includes items on population size, types of access roads, distance to the nearest city, types of transport available, and the availability of public services such as schools, cinemas, sewer systems, and the like.

Objectives and Theory: Family Planning

There are two principal objectives to be served by the collection of service availability data:

- (1) a description of the facilities available to women in the country;
and
- (2) an analysis of the relationship between availability of contraceptive supplies and contraceptive practice.

The first objective would take the form of statistical generalizations such as "68 percent of the women in this country live within 30 minute of a family planning facility," or "women typically have access to available family clinics only three days a week," or "the average cost of pills available to women in this country is ___ per cycle," etc. In theory, such descriptive information is of potential value to family planning professionals.

It is important to note that the nature of the sample precludes statements relating to populations of institutions or facilities. The design is a probability sample of women selected through a sample of clusters of population (of approximately equal numerical size). If facilities were distributed in space proportionate to the populations, then one could argue that any facility would have an equal chance to be included in the sample, but this is not the case. Thus, the statistical generalizations relate only to the population of women. To illustrate: an appropriate statement would be that "x percent of women live near clinics where contraceptive pills are available." It would not be correct to attempt generalizations of the form: "x percent of the clinics in this country provide pills."

The second objective relates to the more analytical purpose of trying to determine how the availability of supplies relates to the adoption and use of contraception. The concept of availability is not only the density of contraceptive supplies or the physical proximity of sources of supply to users. It also includes the components of convenience of access (measured in the questionnaire by the length of time it takes to reach the clinic or the source, and by how often the facility is open), of the variety of methods available, their cost, and medical personnel available. When combined with the individual data on the perceived quality of services and other measures of knowledge of sources and the reputation of different methods, the objective data on availability theoretically should provide a decent picture of the family planning service environment.

What are the analytical questions involved? Clearly, it is not of interest to measure availability in populations where contraceptive prevalence rates are very high (except perhaps for international comparisons); services must be available in some sense if individuals are using methods dependent on such services. The main objective is to try to determine the extent to which variations in the unmet need for contraception (defined as the proportion of exposed women who want to avoid or delay childbearing but who are not using contraception) are related to variations in the availability of contraception. The implicit model is that availability is just one of several factors (including perhaps education, ethnicity, husbands' attitudes, strength of motivation, etc.) that determine use or nonuse; it is a necessary (for some methods) but not sufficient condition. The search for the explanation of unmet need would thus logically begin with an examination of availability; such an analysis can be undertaken both at the individual level, with an availability index for the sample segment being assigned to each individual in the segment, and the aggregate level, where the segment receives both an unmet need score and an availability rating and the covariation is examined across segments. (The typical national sample will include some 250 segments). It should be noted that this formulation of the analytical objective begs the question of the extent to which availability generates demand for fertility regulation, whether the availability of services and supplies actually induces couples to adopt them. Although the year that different methods became available is to be recorded, it seems unlikely that any unambiguous inferences about its demand effects will be able to be drawn through the reconstruction of time sequences.

Objectives and Theory: Health

The health services data collected in the Service Availability Questionnaire are subject to similar types of analysis as the family planning information. At the descriptive level we can estimate the proportion of children who live within 30 minutes of a hospital, clinic or other health service, or who have oral rehydration services available, etc.

At the analytical level, this type of service availability information can be linked with data from the individual questionnaires to address such questions as the relationship between the availability of oral rehydration services and the woman's knowledge of the treatment and to her use of it for children who have had recent episodes of diarrhea. Similar types of analysis can be conducted in connection with the use and availability of prenatal and maternity services.

In more detailed analysis, it may be useful to develop an index of the "availability" of health services to include not only distance and convenience but also the times available and the types of medical services listed. It may also be worth pursuing the analogy of "unmet need" that has been employed so successfully in the family planning field. In general, one focus of interest will be on trying to determine whether untreated illness is a function of the lack of available services. It may also be possible to explore the connections between child mortality and availability of health services but such an analysis is fraught with methodological difficulties.

Next Steps

There are numerous potential problems in collecting the data required in this Service Availability Questionnaire. They involve the selection of knowledgeable respondents, the reliability and accuracy of the information collected, the amount of detail required, the awkwardness of certain questions for large cities, and so forth. In the light of these uncertainties, it was agreed that a data quality analysis would be pursued as soon as possible, perhaps from the Colombia or the Dominican Republic surveys. One obvious check is to determine from the marginal distributions whether certain measures show little variance across clusters, e.g., in metropolitan areas (which would argue against collecting such data in these areas). Another check is to determine whether certain questions reveal high frequencies of nonresponse or of heaping which might argue for deleting or changing questions.

Beyond these and other evaluations of data quality, there is a need to design a model of analysis based on data from an early survey. This model would illustrate the kinds of analyses described above, including the creation of an index and availability and the specification of the dependent variables involved.

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Section 2: The Service Availability Questions

NO.	QUESTIONS	CODING CATEGORIES	SKIP TO
1	IDENTIFICATION	<p style="text-align: center;">_____ (NAME OF LOCALITY)</p> <p>CLUSTER NUMBER </p>	
2	TYPE OF LOCALITY	TOWN/CITY.....1-- VILLAGE.....2 COUNTRYSIDE.....3--	 → 3 → 3
2A	TYPE OF VILLAGE	NUCLEAR.....1 DISPERSE.....2	
3	NUMBER OF INHABITANTS OF LOCALITY	< 500.....1 500 - < 2000.....2 2000 - < 5000.....3 5000 - < 10000.....4 10000 - < 20000.....5 20000 - < 50000.....6 50000 - < 100000.....7 100000 +.....8	 >7
4	TYPE OF MAIN ACCESS ROAD	PAVED: ASPHALT OR CEMENT...1 PAVED: STONE (GOOD).....2 PAVED: STONE (BAD).....3 UNPAVED.....4 NO ROAD.....5	
5	DISTANCE IN KM'S TO NEAREST LOCALITY OF 20000+ INHABITANTS	< 10.....1 10 - < 20.....2 20 - < 30.....3 30 - < 50.....4 50 - < 100.....5 100 +.....6	
6	TYPES OF PUBLIC TRANSPORT COMMONLY USED TO NEAREST LOCALITY OF 20000+ INHABITANTS (CIRCLE ALL APPLICABLE)	BUS.....1 TAXI.....1 BOAT.....1 TRAIN.....1 NONE.....1	

12. AVAILABILITY OF PUBLIC SERVICES NEAREST TO THE CLUSTER.

	(1)		(2)	(3)	(4)
	IN LOCALITY		DISTANCE IN KM'S [a]	MOST COMMON TRANSPORT [b]	TRAVEL TIME TO GET THERE (MINUTES)
	YES	NO			
A. EDUCATION	1	2			
1 Primary School	1	2	□□□□	□□	□□□□□□
2 Secondary School	1	2	□□□□	□□	□□□□□□
3 Higher/Technical	1	2	□□□□	□□	□□□□□□
B. GENERAL SERVICES					
1 Post Office	1	2	□□□□	□□	□□□□□□
2 Weekly Market	1	2	□□□□	□□	□□□□□□
3 Cinema	1	2	□□□□	□□	□□□□□□
4 Sewer System	1	2			
5 Garbage Disposal	1	2			

CODES: [a] 97 = 97+
 00 = Less than 1

[b] Motorized 1
 Animal 2
 Walking 3
 Cycling 4
 Other 5

13. DETAILS ABOUT EACH OF THE HEALTH SERVICES OF DIFFERENT TYPE CLOSEST TO THE CLUSTER. (COLS 3 TO 10 ONLY FOR THOSE SERVICES WITHIN 30 KM'S OF THE CLUSTER.)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	IN LOCALITY?	DISTANCE FROM CLUSTER IN KM'S [a]	TYPE OF MOST COMMON TRANSPORT	TIME TO GET THERE [b]	NUMBER OF DOCTORS [a]	NUMBER OF NURSES [a]	DAYS OPEN	HOURS OPEN (NUMBER)	SERVICES AVAILABLE	YEAR IN WHICH SERVICE STARTED
A. HOSPITAL	YES 1 NO 2 WHERE? (LOCALITY)	[] IF: 30+ 	MOTORIZED 1 ANIMAL 2 WALKING 3 CYCLING 4 OTHER 5	[] (MINUTES)	[]	[]	MONDAY 1 TUESDAY 1 WEDNESDAY 1 THURSDAY 1 FRIDAY 1 SATURDAY 1 SUNDAY 1 OTHER: _____	[] [] [] [] [] [] []	MCH 1 EMERGENCY 1 GENERAL 1 FAM. PLAN. 1 ORAL REHY-DRATION 1	[] [] [] [] []
B. CLINIC	YES 1 NO 2 WHERE? (LOCALITY)	[] IF: 30+ 	MOTORIZED 1 ANIMAL 2 WALKING 3 CYCLING 4 OTHER 5	[] (MINUTES)	[]	[]	MONDAY 1 TUESDAY 1 WEDNESDAY 1 THURSDAY 1 FRIDAY 1 SATURDAY 1 SUNDAY 1 OTHER: _____	[] [] [] [] [] [] []	MCH 1 EMERGENCY 1 GENERAL 1 FAM. PLAN. 1 ORAL REHY-DRATION 1	[] [] [] [] []
C. HEALTH CENTRE	YES 1 NO 2 WHERE? (LOCALITY)	[] IF: 30+ 	MOTORIZED 1 ANIMAL 2 WALKING 3 CYCLING 4 OTHER 5	[] (MINUTES)	[]	[]	MONDAY 1 TUESDAY 1 WEDNESDAY 1 THURSDAY 1 FRIDAY 1 SATURDAY 1 SUNDAY 1 OTHER: _____	[] [] [] [] [] [] []	MCH 1 EMERGENCY 1 GENERAL 1 FAM. PLAN. 1 ORAL REHY-DRATION 1	[] [] [] [] []

CODES: [a] 97 = 97+ [b] 997 = 97+
 9E = D+ 99E = D+
 0C = Less than 1 0CC = Less than 1

13. (CONTINUED)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	IN LOCALITY?	DISTANCE FROM CLUSTER IN KM'S [a]	TYPE OF MOST COMMON TRANSPORT	TIME TO GET THERE [b]	NUMBER OF DOCTORS [a]	NUMBER OF NURSES [a]	DAYS OPEN	HOURS OPEN (NUMBER)	SERVICES AVAILABLE	YEAR IN WHICH SERVICE STARTED
D. PHARMACY	YES 1 NO 2	[] [] IF: 30+	MOTORIZED 1 ANIMAL 2 WALKING 3 CYCLING 4 OTHER 5	[] [] [] [] (MINUTES)	/ / / / / / / / / /	/ / / / / / / / / /	/ / / / / / / / / /	/ / / / / / / / / /	ORAL REHYDRATION PACKETS AVAILABLE? YES 1 NO 2	[] []
(NAME)	WHERE?									
	(LOCALITY)									
E. PRIVATE DOCTOR	YES 1 NO 2	[] [] IF: 30+	MOTORIZED 1 ANIMAL 2 WALKING 3 CYCLING 4 OTHER 5	[] [] [] [] (MINUTES)	/ / / / / / / / / /	/ / / / / / / / / /	/ / / / / / / / / /	/ / / / / / / / / /	ORAL REHYDRATION PACKETS AVAILABLE? YES 1 NO 2	[] []
(NAME)	WHERE?									
	(LOCALITY)									

CODES: [a] 97 = 97+ . [b] 997 = 97+
 98 = DK 998 = DK
 00 = Less than 1 000 = Less than 1

14. DETAILS ABOUT EACH OF THE FAMILY PLANNING SERVICES OF DIFFERENT TYPE CLOSEST TO THE CLUSTER. (COLS 3 TO 10 ONLY FOR THOSE SERVICES WITHIN 30 KM'S OF THE CLUSTER.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	IN LOCALITY?	DISTANCE FROM CLUSTER IN KM'S [a]	TYPE OF MOST COMMON TRANSPORT	TIME TO GET THERE [b]	METHODS AVAILABLE	COST OF METHODS	YEAR METHOD FIRST AVAILABLE	NUMBER OF DOCTORS FOR FAM. PLAN. [a]	NUMBER OF NURSES FOR FAM. PLAN. [a]	DAYS OPEN FOR FAM. PLAN.	HOURS OPEN FOR FAM. PLANNING (NUMBER)
A. HOSPITAL	YES 1 NO 2	<input type="text"/> IF: 30+	MOTORIZED 1 ANIMAL 2 WALKING 3 CYCLING 4 OTHER 5	<input type="text"/> (MINUTES)	PILL 1 IUD 1 INJECTIONS 1 CONDOM 1 FEM. STER. 1 MALE STER. 1 OTHER 1	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	MONDAY 1 TUESDAY 1 WEDNESDAY 1 THURSDAY 1 FRIDAY 1 SATURDAY 1 SUNDAY 1	<input type="text"/>
(NAME)	WHERE?									OTHER: _____	
(LOCALITY)											
B. CLINIC	YES 1 NO 2	<input type="text"/> IF: 30+	MOTORIZED 1 ANIMAL 2 WALKING 3 CYCLING 4 OTHER 5	<input type="text"/> (MINUTES)	PILL 1 IUD 1 INJECTIONS 1 CONDOM 1 FEM. STER. 1 MALE STER. 1 OTHER 1	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	MONDAY 1 TUESDAY 1 WEDNESDAY 1 THURSDAY 1 FRIDAY 1 SATURDAY 1 SUNDAY 1	<input type="text"/>
(NAME)	WHERE?									OTHER: _____	
(LOCALITY)											
C. HEALTH CENTRE	YES 1 NO 2	<input type="text"/> IF: 30+	MOTORIZED 1 ANIMAL 2 WALKING 3 CYCLING 4 OTHER 5	<input type="text"/> (MINUTES)	PILL 1 IUD 1 INJECTIONS 1 CONDOM 1 FEM. STER. 1 MALE STER. 1 OTHER 1	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	MONDAY 1 TUESDAY 1 WEDNESDAY 1 THURSDAY 1 FRIDAY 1 SATURDAY 1 SUNDAY 1	<input type="text"/>
(NAME)	WHERE?									OTHER: _____	
(LOCALITY)											

CODES: [a] 97 = 97+ [b] 997 = 97+
 9E = D+ 95B = D+
 00 = Less than 1 000 = Less than 1

14. (CONTINUED)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	IN LOCALITY?	DISTANCE FROM CLUSTER IN KM'S [a]	TYPE OF MOST COMMON TRANSPORT	TIME TO GET THERE [b]	METHODS AVAILABLE	COST OF METHODS	YEAR METHOD FIRST AVAILABLE	NUMBER OF DOCTORS FOR FAM. PLAN. [a]	NUMBER OF NURSES FOR FAM. PLAN. [a]	DAYS OPEN FOR FAM. PLAN.	HOURS OPEN FOR FAM. PLANNING (NUMBER)
D. PHARMACY	YES 1 NO 2 WHERE? (LOCALITY)	[] IF: 30+	MOTORIZED 1 ANIMAL 2 WALKING 3 CYCLING 4 OTHER 5	[] [] (MINUTES)	PILL 1 IUD 1 INJECTIONS 1 CONDOM 1 FEM. STER. 1 MALE STER. 1 OTHER 1	[] [] [] []	[] [] [] []	/	/	/	/
E. PRIVATE DOCTOR	YES 1 NO 2 WHERE? (LOCALITY)	[] IF: 30+	MOTORIZED 1 ANIMAL 2 WALKING 3 CYCLING 4 OTHER 5	[] [] (MINUTES)	PILL 1 IUD 1 INJECTIONS 1 CONDOM 1 FEM. STER. 1 MALE STER. 1 OTHER 1	[] [] [] []	[] [] [] []	/	/	/	/

CODES: [a] 97 = 97+ [b] 997 = 97+
 98 = DK 998 = DK
 00 = Less than 1 000 = Less than 1

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Section 3: Instructions for Completing the Information Relating to Sample Clusters

General

The information to be collected is mostly of a factual nature. Unlike many previous efforts where information was obtained from one or two knowledgeable sources in the community, the information to be obtained here will be collected by a special team of field workers who will visit each and every cluster in the sample and complete the information required on the basis of fact and not impression, wherever possible.

The information to be collected is basically of three types:

- a) background information on the locality in which the cluster is located
- b) information on availability of health services for people in the cluster
- c) information on availability of family planning services for people in the cluster.

The standard questionnaire must, of course, be adapted to the situation prevailing in the country regarding health and family planning services, and to other issues such as forms of transport, cost, etc.

Locality is considered to be the place (city, town, village, etc.) where the cluster is located. The name commonly used for this place denotes the locality. Locality is not to be interpreted as the neighborhood or area in which the cluster is located. Very little information is collected on the locality as such, especially if it has 20,000 or more inhabitants. The bulk of the information relates directly to the cluster, irrespective of the size of the locality.

When collecting information about services, it should be borne in mind that the information probably applies to several clusters. For example, if a particular hospital is the nearest health service hospital for clusters 111, 112, 113 and 114, the facility should be visited only once and the information can then be copied in the questionnaires for the remaining three clusters.

Similarly, a particular place of service may be the nearest of that type, both for health and family planning services. In such a case, health and family planning information should both be collected during the same visit and transferred to all the clusters to which they apply.

Only facilities which provide general health and/or family planning services to all of the population in the area should be entered. Hospitals or clinics which only cover certain populations such as: the army, unions, etc. should not be entered, except in cases where the population of the cluster is obviously linked to that particular hospital or clinic. This would be the case, say, where a clinic belonging to a factory is actually the clinic used by a significant part (at least 25 percent) of the cluster's population.

Clinics and hospitals caring only for illnesses which are not readily identifiable as of importance for maternal and child health should not be registered. For instance; a heart and lung hospital, a center for diabetics, etc.

During the data collection, the fieldworker should keep a running list of all services visited, so that it can be known immediately whether or not information for a given place has already been collected.

Although not always possible, it may be advisable to obtain, from relevant ministries and organizations, a list of service establishments which can be consulted during the fieldwork in order to verify that the information obtained in the field about what is the nearest facility is actually correct.

Specific Instructions:

Question 1. Write here the name of the locality in which the cluster is located. This name will normally correspond to the name of the city, town or village in which the cluster is located. If the cluster is in a big city, write the name of that city; if it belongs to a small village, write the name of that village. Record the cluster number. This number will be assigned by the survey director on the basis of the final sample selection and provided to you prior to data collection.

Question 2. Type of locality. Use the census definition to assign the appropriate code.

Question 2A. Circle code 1 (NUCLEAR) if the village houses are "bunched together" or houses have been constructed around a village square, church or similar set-up. Circle code 2 (DISPERSE) if there is no indication that there is a village center and houses are not "bunched together."

Question 3. Number of inhabitants. Use the most recent census information (or official estimation) to complete this item. Note that the information in 1, 2, and 3 can be completed in the office.

Question 4. Note that we want the main access road, or what is considered to be the main access road if the former cannot be determined. A road can only be considered the main access road if the actual traffic on that road is greater than on any other access roads.

Question 5. Record the actual distance and not the distance estimated by some informant in the cluster. Use of an odometer is the best way, although a combination of this and known distance can be used.

Question 6. This information should be obtained from knowledgeable residents in the cluster.

Question 7. A community Based Distribution (CBD) program will most often be characterized by the following features: home visits to all the households in the community by family planning workers from the community, at least initially; a central depot for the storage and distribution of contraceptives (this can be a family worker's home). The basic idea behind a CBD program is that family planning and other health services should not only depend upon health professionals working in clinics and hospitals, but can also be taken care of by paraprofessionals who deliver the services to the clients' home, or at least bring them closer to the home.

Question 8. The family planning fieldworker, referred to here, is distinct from the family planning worker in a CBD program. Here we are looking for a clinic or hospital-based family planning worker who visits the cluster, without necessarily enjoying the same support and organization as the CBD program. It may often be difficult to maintain the distinction between a CBD program and a family planning fieldworker. When in doubt, it is important to record this, and the reason for it, in the questionnaire so that an informed decision can be taken about the information at the time of data entry and processing.

Question 7 to 11. It is necessary to establish with residents of the cluster whether the coverage is actually there. It is not enough that at a central level somebody states that the cluster is covered. Similarly, methods and costs should be verified with the service providers.

To provide a method does not necessarily mean that the actual method is obtained directly from the provider. For instance, if a doctor gives prescriptions for the pill, it should be considered that he/she provides the pill, although the client will actually have to go to a pharmacy to get it. Similarly, a family planning fieldworker may "provide" sterilization by arranging for such an operation to take place in a nearby hospital, etc.

Questions 12, 13, 14.

Col. 1. If the facility is located in the same locality as the cluster, the "yes" answer should be circled. Locality is defined by the name of the city, town, village or area of the countryside in which the segment is located. In large cities, probably all facilities will be available in the locality. For facilities not available in the locality, find out which is the nearest.

Col. 2. For all facilities, record the distance from the center of the cluster to the nearest facility. This should be the actual distance. The information should, therefore, come from actual observation through the use of an odometer; in practice, however, the opinions of residents of the cluster will often have to form the basis for this information, as the use of an odometer is not possible. Try to get the best possible answer in the cluster and verify this given distance if feasible. We are not looking to obtain the nearest facility "as the crow flies," but rather the nearest place from the point of view of accessibility and distance. If there is a school at the other side of the river (only half a kilometer from the cluster), but to get there one needs to make a detour of 5 kilometers, then this school will not be the nearest if there is another one within 5 kilometers of traveling distance from the cluster. If the nearest facility of a certain kind is 30+ kilometers away from the cluster, no further questions should be asked regarding that facility.

Col. 4. As with the distance, it is not always possible to duplicate the travel time and get factual information. More often than not, the information will be obtained from residents of the cluster without the possibility of verification. If, for instance, the time to get to a place is a reported two hours on horseback, the person collecting the information is not expected to get on a horse and verify this. Try to obtain the best possible information in the cluster by asking a group of respondents.

Question 13

Cols. 5 and 6. The number of doctors and nurses should be obtained from reliable sources in the facility. It will happen that some facilities have different staff numbers on different days and/or that some of the staff work only part-time. For these cases, an estimate should be made of the number usually available. Say, of a total number of 50 doctors working with a hospital, only 10 are working in that hospital on any given day. Ten should then be coded under number of doctors and not 50. The same reasoning should be followed for nurses.

Cols. 7 and 8. Circle the codes for each day of the week that the facility is open and record the total numbers of hours open on each of those days. In "OTHER" record answers such as: "once every two weeks on Thursdays for 4 hours" and similar answers which cannot be dealt with in the existing coding categories.

Cols. 9 and 10. Circle each of the services available at the facility and, for each available, the year in which that service was initiated. MCH stands for Maternal and Child Health. You may have to consult several people at the facility, especially about the year in which a particular service was started. Only when it is impossible to get an accurate answer should the code 98 (D.K.) be used.

Question 14

Col. 5. Circle all the methods available from the source, bearing in mind what was said about method providing in the instructions to questions 7 to 11.

Col. 6. For each method available from the source, record the cost. Free of cost is 00.

Col. 7. For each of the methods available, record the year in which they first became available in this facility. You may have to ask several people in the facility as not all may remember exactly when each method was adopted by the facility. If it is absolutely impossible to obtain an accurate answer, write 98 for the corresponding method.

Col. 8-9. As cols. 5 and 6 for question 13.

Col. 10-11. As cols. 7 and 8 for question 13.

Concluding Remarks

The service availability questionnaire will be used in all clusters selected for the DHS sample. Its information should be collected by a specialized small number of people, generally 3 or 4, who will visit all these clusters and the nearest health and family planning facility of each type, if within 30 kilometers of the cluster.

In the instructions, a number of particular situations and problems have been dealt with, but no doubt there are others which have not been foreseen. However, the availability questionnaire differs considerably from the questionnaire for individual women in that there are many fewer of them, generally approximately 250. Therefore, it is possible to deviate from the normal system of recording one answer only. When in doubt, the collectors of the availability information should record on the questionnaire any explanatory remarks necessary to describe a particular situation correctly. During the data processing of the questionnaire, these explanations will be used to ensure that the answers get coded correctly. Another difference between this and the individual questionnaire is that there are no preformulated questions in the service availability questionnaire, just topics. It is up to the data collector to collect the most accurate information by asking whatever questions are necessary to ensure this.

Appendix B

Service Availability Surveys (DHS-I)

Appendix B

Service Availability Surveys (DHS-I)

Burundi

The Burundi survey used an abridged version of the DHS-I model service availability questionnaire. Questions about community setting and general services were limited to: principal type of road; distance to the provincial capital and to the local, major city; major type of transport to both those cities; and distance to a primary school and market. Distances to schools, markets, and health facilities (the nearest hospital, health center, and dispensary) were precategorized. No facilities were visited, and informants were only asked if there was a health center providing family planning in the locality and, if so, which methods were distributed. The only specific questions concerning family planning asked of community informants were about family planning in the community.

The service availability data were collected before the main survey, by cartographers, and only in rural clusters. The survey was conducted from January 1987 through March 1987.

Colombia

The service availability questionnaire used in Colombia was quite similar to the DHS-I model questionnaire and included the same questions about community setting, outreach programs, and general services. The major deviation from the model questionnaire concerned travel times to stationary facilities: interviewers only asked about travel time when a motorized form of transportation was used. Informants were asked to identify the nearest hospital, clinic, health center, pharmacy, and private doctor offering health services as well as the nearest facility of each kind that offered family planning services. Facilities were visited if they were within 30 kilometers of the cluster, and all the standard questions were asked.

The service availability survey was fielded at the same time as the individual survey and was conducted in all clusters. Supervisors were responsible for collecting the information in rural areas, while special teams were used in urban areas. All interviewers used information provided by the Ministry of Health and PROFAMILIA about facility locations to collect accurate information. The data were collected between late October 1986 and early December 1986.

Dominican Republic

The Dominican Republic survey employed a service availability questionnaire that was quite similar to the model one. It included typical questions about community setting, general services, and outreach programs. Informants were asked to identify the nearest

hospital, health center or polyclinic, private clinic, rural clinic, private doctor, and pharmacy that offered general health services and also the nearest one of each type that offered family planning. Interviewers visited those facilities within 30 kilometers of the cluster and asked questions very similar to those in the model questionnaire.

The service availability survey was fielded at the same time as the individual survey, and data were collected in both rural and urban clusters, with the exception of 7 clusters (3 rural and 4 urban). It is not known why data from these 7 clusters are missing, but probably they were not covered in the field. Their omission was not discovered until the end of the data collection operation. In addition, several clusters, for which service availability information was collected, contained no interviewed women. All service availability information was collected by three specially trained interviewers between September 1986 and mid-March 1987. This fieldwork took longer than the individual survey because of the small number of interviewers, and it was conducted as a separate field operation.

Ecuador

The service availability questionnaire used in Ecuador was similar to the model questionnaire and contained the standard questions about community setting, general services, and outreach programs, although the questions were adapted to fit the country's setting. Informants were asked to identify the nearest hospital, clinic, health center, pharmacy, and private doctor that offered general health services as well as the nearest one of each type that offered family planning services. Interviewers visited the facilities within 30 kilometers of the cluster and asked questions similar to the ones in the model questionnaire.

Specially trained cartographers collected the service availability data after the main survey was completed. They gathered information on every cluster, both rural and urban, with the exception of one rural cluster. Fieldwork was conducted from February 16, 1987 to April 15, 1987.

Egypt

The Egyptian service availability survey employed a questionnaire that was quite different from the DHS-I model, both in layout and content. In fact, the Egyptian questionnaire more closely resembles the one being used during DHS-II. Also, the Egyptian survey was based on villages rather than clusters, with each village containing two clusters. It was the characteristics of the village, rather than the cluster, that were deemed to be meaningful, so the information was collected for villages rather

than clusters. The questions about community setting, general services, and outreach programs were similar to those in the model questionnaire.

The Egyptian survey did not follow standard methodology in investigating nearby health and family planning facilities. Other DHS-I service availability surveys asked informants to identify the nearest facility of each type *regardless of its distance*. Then interviewers visited those facilities within a specified distance of the cluster, usually 30 kilometers. Instead, in Egypt interviewers only asked about facilities *if they were less than 30 kilometers from the village*. Thus, more distant facilities were not even identified. Also, interviewers identified and visited *all* facilities within the village, even if there more than one of the same type. If there was no example of a particular type of facility within the village, the interviewer then visited the nearest facility within 30 kilometers of the village. Data was gathered on government hospitals, government maternal and child health centers, government family planning clinics, private voluntary family planning clinics, and pharmacies. Village informants were also asked about private clinics, but none were visited.

The Egyptian survey included most of the standard service availability questions and added many more. It covered specific facility staff training; family planning and health lectures; information, education and communication (IE&C) materials at the facility for health and family planning; and numbers of users for various services. The survey was conducted only in rural clusters and was fielded after the individual DHS survey by separate, specially trained interviewers. The data were collected during June 1989.

Guatemala

The Guatemalan service availability questionnaire was similar to the model questionnaire and included typical questions about community setting, general services, and outreach programs. However, there were no questions about mobile clinics, the training of traditional birth attendants, or the existence of a trained midwife in the cluster. Informants were asked about the nearest hospital, clinic, health center, pharmacy, and private doctor that offered health services and the nearest one of each type that offered family planning services. Only facilities within 30 kilometers of the cluster were visited, and questions identical to those in the model questionnaire were asked.

The service availability survey was conducted in all clusters, except in Guatemala City where only one cluster was surveyed. For this reason, the analysis includes only rural areas. Six rural clusters were not completed. There was some difficulty during the survey because Ministry of Health workers went on strike, and the interviewers had to wait until the strike ended to complete the survey. The service availability survey was fielded after the individual DHS survey with a separate team conducting

the interviews. Fieldwork commenced in November 1987 and finished in March 1988.

Thailand

In Thailand, the service availability questionnaire closely resembled the model questionnaire. Only two types of facilities were visited, however: government hospitals and health centers (if they were within 30 kilometers). Interviewers also asked informants about health and family planning services available from private clinics and modern pharmacies and the distances to these facilities, but did not visit them.

The service availability survey in Thailand was conducted only in the 192 rural clusters. Several clusters comprised two or more villages, with separate service availability information for each village. While service availability data was collected in all rural clusters, women in five villages cannot be matched to the service availability information. These women are included in the denominator in all tables. The service availability survey was fielded at the same time as the main survey, with supervisors responsible for gathering the information. Fieldwork took place during the main survey from mid-March to mid-June 1987.

Togo

The Togo survey employed an abridged version of the model service availability questionnaire. It excluded questions about outreach programs, although questions about community setting and general services were asked. Also, the way in which questions about time and transportation to facilities were asked makes it impossible to determine which type of transportation the times refer to.

There were also major differences in how facilities were identified and which ones were visited. Informants were asked to identify the nearest hospital, polyclinic, health center, dispensary, PMIs (protection maternelle et infantile), pharmacy, and private clinic which offered health services. They were *not* asked to identify facilities that offered family planning. Furthermore, *all* the facilities identified were visited, regardless of their distance from the cluster. During their visits to the facilities, interviewers did establish whether family planning services were provided, but did not ask any specific questions, such as which types of contraceptives were offered or during what hours family planning services were available. Instead, interviewers asked extra questions about health services, in addition to those posed in the model service availability questionnaire. They inquired in detail about the types of health services provided, including pediatrics, oral rehydration therapy units, and immunizations.

The service availability survey was fielded after the main survey. Data were collected for both rural and urban areas; how-

ever, since not all urban *clusters* were covered, this analysis omits the partial urban data.

Tunisia

The Tunisian survey used a service availability questionnaire similar to the model questionnaire. It included the standard questions about the community setting, general services, and outreach programs. Informants were asked to identify the nearest of each of the following types of facility that offered health and family planning services: hospitals or maternity hospitals; protection maternelle et infantiles (PMIs) or polyclinics; health centers or dispensaries; pharmacies; private doctors; and centres regional d'education et planification familiale (CREPFs) (family planning clinics). Facilities within 30 kilometers of the cluster were visited, and interviewers asked questions similar to those in the model questionnaire.

The service availability survey was fielded before the individual survey took place. Data were collected in both urban and rural clusters, with the exception of one rural and one urban cluster. The data for women living in these clusters are missing, but they are counted in the denominator for Tunisia. The survey was conducted from early February to mid-March 1988.

Uganda

In Uganda, a questionnaire similar to the model service availability questionnaire was used. In addition to the model questions on community setting, general services, and outreach programs, interviewers also asked extra questions about the number of different types of water sources and about community vaccination, food rationing, and child weighing programs. Informants were asked to identify the nearest hospital, health center, private clinic with a regular doctor, and pharmacy offering health services as well as the nearest facility of each kind that offered family planning services. Interviewers visited those facilities within 15 miles of the cluster and asked questions very similar to those in the model questionnaire.

The service availability survey was conducted only in rural areas. Sixteen rural clusters were omitted, however. Of these, 11 were located in the region of Luwero, which was oversampled in the individual survey in order to make special estimates. The remaining 5 rural clusters were spread throughout the country. In order to adjust for the large number of missing rural clusters, the sample weights were redone. Another problem is that the overall DHS sample did not include all parts of the country, since some areas were not deemed safe at the time of the survey. Nonetheless, the rural sample for both the service availability and individual surveys is thought to be representative. The service availability survey was fielded at the same time as the individual DHS survey, by the same interviewers. Fieldwork took place from September 1988 until February 1989.

Zimbabwe

The Zimbabwe service availability questionnaire differed greatly, both in layout and content, from the DHS-I model questionnaire; it more closely resembled the DHS-II questionnaire. While the questions regarding the community setting and general services were similar to those in the DHS-I questionnaire, the outreach questions were expanded to collect more thorough information on health and family planning services available in the community.

There were also marked differences in the way in which facilities were identified and followed up. Interviewers first asked informants to identify the nearest facility in each of these categories: large (general, district, or industrial) hospital; small (rural or mission) hospital; polyclinic, clinic, or health center; ZNFPC clinic; pharmacy; and private doctor. Then, the informants were asked if that facility offered family planning. If it did not, they were asked to identify the nearest facility of the *same type* where family planning services were available. The interviewers not only asked informants the distance and time to the identified facilities, but also asked their opinions about each one.

Interviewers visited the nearest facility in each of the first four categories if it was within 30 kilometers of the cluster. Pharmacies and private doctors were visited only when they were within 10 kilometers. Interviewers asked many more questions during these visits than were included in the DHS-I model questionnaire—especially about health services. They collected detailed information about all aspects of the health and family planning services offered, including staff, equipment, logistics, and operational hours.

The service availability survey was not an integral part of the main DHS survey in Zimbabwe. Rather, it was done under contract with the World Bank and conducted approximately a year after the individual survey. A separate group of interviewers was trained to collect this information, and the fieldwork lasted from November 1, 1989 until January 31, 1990. Information was collected for all DHS clusters, with the exception of one rural cluster whose inhabitants had been moved out of the area prior to the construction of a dam.

Appendix C

Summary of DHS-I Surveys, 1985-1990

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Summary of DHS Surveys, 1985-1990

Region and Country	Date of Fieldwork	Implementing Organization	Respondents	Sample Size	Supplemental Studies, Modules, and Additional Questions
SUB-SAHARAN AFRICA					
Botswana	Aug-Dec 1988	Central Statistics Office	All women 15-49	4,368	AIDS, PC, adolescent fertility
Burundi (Husband Survey)	Apr-Jul 1987	Département de la Population Ministère de l'Intérieur	All women 15-49	3,970	AM, SAI, adult mortality
Burundi	Apr-Jul 1987	Département de la Population Ministère de l'Intérieur	Husbands	542	KAP study
Ghana ¹	Feb-May 1988	Ghana Statistical Service	All women 15-49	4,488	AM, SM, WE
Kenya ²	Dec. y 1988/89	National Council for Population and Development	All women 15-49	7,150	
Liberia	Feb-Jul 1986	Bureau of Statistics Ministry of Planning and Economic Affairs	All women 15-49	5,239	TBH, employment status
Mali	Mar-Aug 1987	Institut du Sahel USED/CERPOD	All women 15-49	3,200	AM, VC, childhood physical handicaps
Mali (Male Survey)	Mar-Aug 1987	Institut du Sahel USED/CERPOD	Men 20-55	970	KAP study
Ondo State, Nigeria	Sep-Jan 1986/87	Ministry of Health, Ondo State	All women 15-49	4,213	AM, TBH
Senegal	Apr-Jul 1986	Direction de la Statistique Ministère de l'Economie et des Finances	All women 15-49	4,415	AM, CD
Sudan	Nov-May 1989/90	Department of Statistics Ministry of Economic and National Planning	EMW 15-49	5,860	M, MM, female circumcision family planning services
Togo	Jun-Nov 1988	Unité de Recherche Démographique Université du Bénin	All women 15-49	3,360	AM, SAI, marriage history
Uganda	Sep-Feb 1988/89	Ministry of Health	All women 15-49	4,730	AM, SAI
Zimbabwe	Sep-Jan 1988/89	Central Statistical Office	All women 15-49	4,201	AIDS, AM, PC, SAI, WE
NORTH AFRICA					
Egypt	Oct-Jan 1988/89	National Population Council	EMW 15-49	8,911	AM, CD, MM, PC, SAI, WE, women's status
Morocco	May-Jul 1987	Ministère de la Santé Publique	EMW 15-49	5,982	AM, CD, S
Tunisia	Jun-Oct 1988	Office National de la Famille et de la Population	EMW 15-49	4,184	AM, CD, S, SAI

¹Data available for 943 husbands interviewed with a husband's questionnaire
²Data available for 1,133 husbands interviewed with a husband's questionnaire

CMW = currently married women
 EMW = ever-married women

Region and Country	Date of Fieldwork	Implementing Organization	Respondents	Sample Size	Supplemental Studies, Modules, and Additional Questions
ASIA					
Indonesia	Sep-Dec 1987	Central Bureau of Statistics, National Family Planning Coordinating Board	EMW 15-49	11,844	PC, SM
Nepal (In-depth)	Feb-Apr 1987	New Era	CMW 15-49	1,623	KAP-gap survey
Sri Lanka	Jan-Mar 1987	Department of Census and Statistics, Ministry of Plan Implementation	EMW 15-49	5,865	AM, NFP
Thailand	Mar-Jun 1987	Institute of Population Studies Chulalongkorn University	EMW 15-49	6,775	AM, S, SAI
LATIN AMERICA & CARIBBEAN					
Bolivia	Mar-Jun 1989	Instituto Nacional de Estadística	All women 15-49	7,923	AM, CD, MM, I-C, S, WE
Bolivia (In-depth)	Mar-Jun 1989	Instituto Nacional de Estadística	All women 15-49	7,923	Health
Brazil	May-Aug 1986	Sociedade Civil Bem-Estar Familiar no Brasil	All women 15-44	5,892	AM, PC, SM, abortion, young adult use of contraception
Colombia	Oct-Dec 1986	Corporación Centro Regional de Población, Ministerio de Salud	All women 15-49	5,329	AM, PC, SAI, SM
Dominican Republic	Sep-Dec 1986	Consejo Nacional de Población y Familia	All women 15-49	7,649	NFP, S, SAI, SM, family planning communication
Dominican Republic (Experimental)	Sep-Dec 1986	Consejo Nacional de Población y Familia	All women 15-49	3,885	
Ecuador	Jan-Mar 1987	Centro de Estudios de Población y Paternidad Responsable	All women 15-49	4,713	SAI, CD, employment
El Salvador	May-Jun 1985	Asociación Demográfica Salvadoreña	All women 15-49	5,207	S, TBH
Guatemala	Oct-Dec 1987	Instituto de Nutrición de Centro América y Panamá	All women 15-44	5,160	S, SAI
Mexico	Feb-May 1987	Dirección General de Planificación Familiar, Secretaría de Salud	All women 15-49	9,310	NFP, S, employment
Peru	Sep-Dec 1986	Instituto Nacional de Estadística	All women 15-49	4,999	NFP, employment, cost of family planning
Peru (Experimental)	Sep-Dec 1986	Instituto Nacional de Estadística	All women 15-49	2,534	
Trinidad and Tobago	May-Aug 1987	Family Planning Association Trinidad and Tobago	All women 15-49	3,806	AM, NFP, breastfeeding

AIDS acquired immune deficiency syndrome
AM anthropometric measurements
CD causes of death (verbal report of symptoms)
S sterilization
M migration

MM maternal mortality
NFP natural family planning
PC pill compliance
WE women's employment
SAI service availability information

SM social marketing
TBH truncated birth history
VC value of children